

3 1761 11708707 2

CA1  
MU 1  
-69S05

GOVT











CAI  
MU 1  
-69505

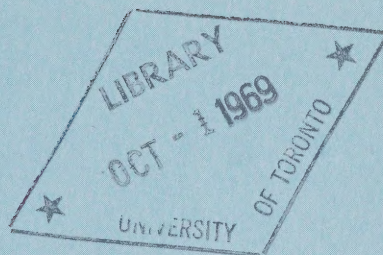


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## CABOT STRAIT

August 8 to October 8, 1966

No. 5

1969 Data Record Series

Canadian Oceanographic Data Centre

Programmed by the  
Canadian Committee on Oceanography

1969

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# **CABOT STRAIT**

**August 8 to October 8, 1966**

**CODC Reference: 10-66-003**

**No. 5**

**1969 Data Record Series**

**DEPARTMENT OF ENERGY, MINES AND RESOURCES**

**Canadian Oceanographic Data Centre**

**615 Booth St., Ottawa, Canada**

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DEPARTMENT OF ENERGY, MINES AND RESOURCES

MARINE SCIENCES BRANCH

CABOT STRAIT

Ship:	MV "Theta"
Local cruise designation:	BI 2166
CODC cruise reference no:	10-66-003
Cruise period:	August 8 - October 8, 1966
Officer in Charge:	D.D. Dobson
Observers:	F.D. Ewing W.J. MacNeil S.B. McHughen L. Guphill

ATLANTIC OCEANOGRAPHIC LABORATORY

BEDFORD INSTITUTE, Dartmouth, N.S.





## SECTION I

Description of data collection procedures

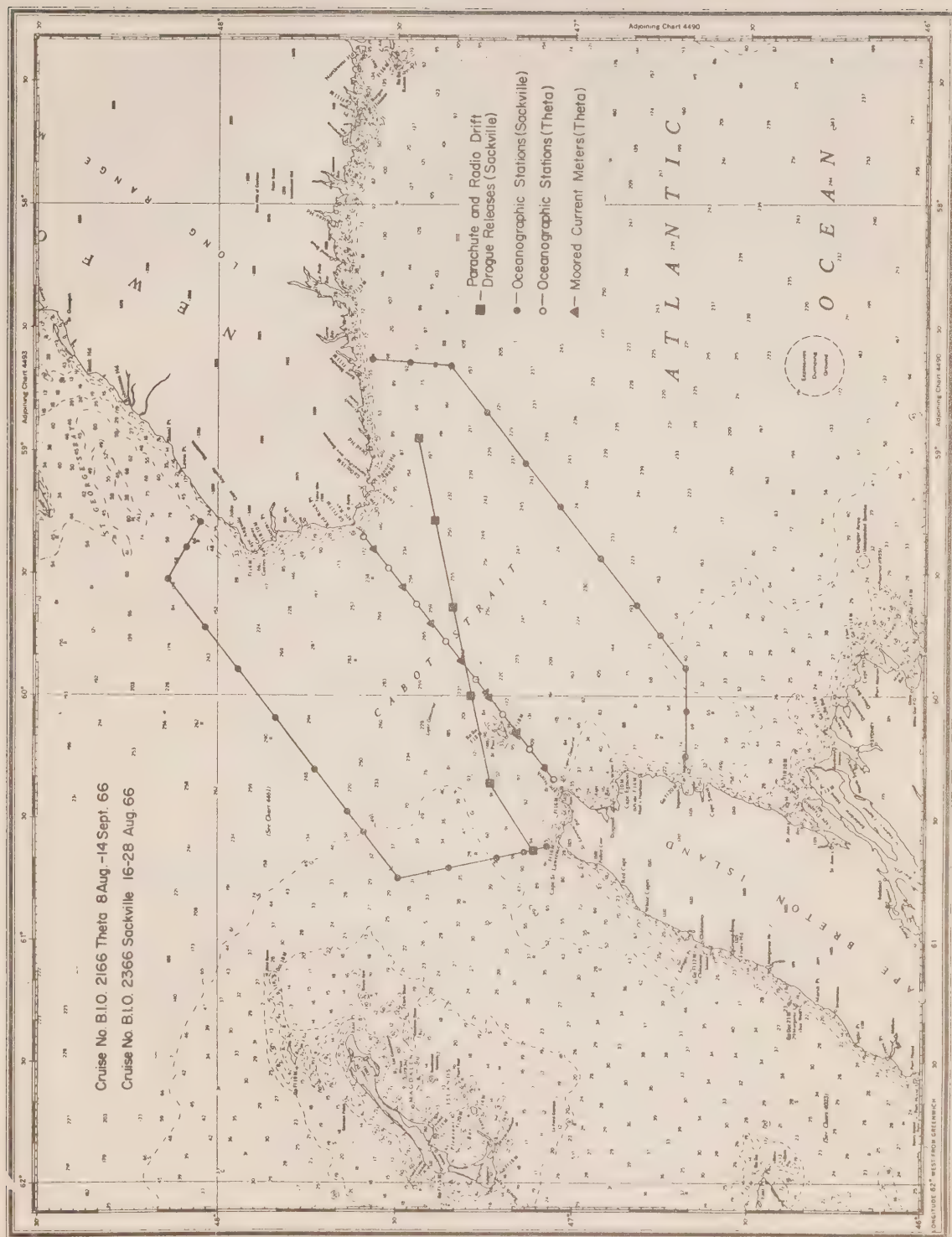














## INTRODUCTION

The object of this cruise was to moor water bottles at 8 stations and current meters at 7 stations in between them, on a line across Cabot Strait, to enable comparisons to be made between geostrophic flow and direct measurement. Due to failures in the equipment, the moored bottle program had to be abandoned and oceanographic data were collected by the ship at the 8 positions on 6 consecutive crossings of the Strait between 29 August and 1 September, a total of 43 stations (subsequently the data from one of these stations had to be discarded). Additional oceanographic data were collected by CNAV "Sackville", on BI Cruise 2366, CODC Ref. 10-66-004, on section lines 30 miles either side of the Strait.

## EXTRACT OF CRUISE LOG

Departed Halifax, N.S.	8 August, 1966
Began oceanographic stations across Cabot Strait	29 August, 1966
Finished 6th crossing of Cabot Strait	1 September, 1966
Arrived Halifax, N.S.	8 October, 1966

## OBSERVATIONAL PROCEDURES

Temperature and salinity data were collected in single casts using standard sampling procedures and depths down to the bottom.

Two protected thermometers were used on Knudsen-type reversing bottles, with one unprotected thermometer being used on the bottom bottle below 400 metres. Thermometers manufactured by Yoshino and by Richter and Weise were used.

Bathythermograph lowerings were made at each station.

Salinities were run on the NIO salinometer at the Bedford Institute. The 1966 NIO-UNESCO tables were used to convert from conductivity ratio to salinity.



PERSONNELAt Sea:

D.D. Dobson	Officer-in-Charge
D.J. Lawrence	
F.D. Ewing	
W.J. MacNeil	
S.B. McHughen	
L. Guphill	(Summer Assistant)

Data Analyses at Bedford Institute:

Compilation of data:	D.J. Lawrence
Salinity determinations:	W. Young

## SECTION II

Description of the machine-generated data record





## INTRODUCTION

This section applies to the machine processing phase of the data reduction and computation.

The oceanographic data previously recorded on CODC data summary forms, a sample of which is shown on the next page, are transferred to punch-cards for subsequent electronic data processing on an IBM 1620 computer, using CODC's OCEANS II program. In addition to computing routine derived quantities, the program carries out unit and format conversions, range checks, plausibility tests, internal editing, and if required, interpolation at standard oceanographic depths. When interpolations are carried out, additional derived values are computed.

After the data have been processed, the data record is prepared using an IBM 1401 computer configuration with the OCEAN REPORT III program, which provides for pre-edited high speed print-out on continuous direct-image masters. These masters subsequently yield the required volume of copies for distribution.

Provision has been made to enter an "estimate of precision" for each observed variable selected for interpolation at standard oceanographic depths. The precision depends on the instrument and/or technique used to determine the variable. A standard precision stated as a **standard deviation** ( $\sigma$ ) can be determined for each instrument or technique under routine field conditions by making duplicate determinations of the variables for a homogeneous sample of sea water. These standard deviations are given for each cruise under "GENERAL INFORMATION" in section III of the data record.

The **measurement error estimate** of a specific observation in this data record, is stated as a multiple of the standard deviation derived as above, and entered in a column immediately to the right of the reported variable. In order to distinguish it from an additional decimal digit, the measurement error estimate is recorded alphabetically, (i.e.,  $1\sigma = A$ ,  $2\sigma = B$ , etc.; in this data record "A" is suppressed).

An option is provided with respect to the measurement of the salinity variable. If observed to three decimal digits, the last digit takes the place of the measurement error estimate.

In the past, a number of methods for both manual and machine interpolation have been developed. Studies and comparisons of the several methods have shown that no single method is universally acceptable. The manual methods are the most elaborate and flexible, but often require subjective decisions. In machine interpolation, all the present methods fail to yield acceptable results under some circumstances. Hence, it is considered necessary to qualify interpolated values by stating an "interpolation error estimate" derived from the particular interpolation formula used. There are two purposes in stating the error estimates; **first**, to give an indication of the quality of the interpolated data; **second**, to allow the oceanographer to redesign his observational procedures in order to reduce interpolation errors in future observations.

The interpolation scheme chosen for the OCEANS II program consists of a combination of two 3-point interpolations using the Lagrangian interpolation polynomial, as recommended by Rattray (1962). A parabola is fitted through three values of a given variable (T, S,  $O_2$ ) considered as a function of depth. The two interpolation parabolas require a total of four points (observed depths). The middle points are common to both parabolas. The average of the two values obtained from the parabolas at standard depth is taken as the interpolated value, and a function of their difference as an estimate of the interpolation error.

This function combined with the "measurement error estimate" comprises the "combined measurement and interpolation error estimate". It is expressed as a multiple of the standard deviation of measurement ( $\sigma$ ) under normal routine field conditions by:

## CANADIAN OCEANOGRAPHIC DATA CENTRE

[illegible]

$$\frac{\sigma_i}{\sigma} = \left\{ \frac{(\Delta V_i)^2}{\sigma^2} + \sum_{n=j-2}^{j+1} (\gamma_n)^2 \left( \frac{\sigma_n}{\sigma} \right)^2 \right\}^{1/2}, \text{ where}$$

$\sigma$  = Standard deviation of the combined error estimates at standard oceanographic depth,  
 $\Delta V_i$  = the interpolation error estimate of variable "V" at standard oceanographic depth =  $1/3 (\bar{V}_{i_1} - V_{i_2})$   
 $\gamma$  = Interpolation polynomial coefficient.

$Z_j$  = Observed depth.

$Z_i$  = Standard oceanographic depth, such that:  $Z_{j-2} < Z_{j-1} < Z_i < Z_j < Z_{j+1}$

The integral part of the fraction  $\frac{\sigma_i}{\sigma}$ , if  $\geq 2$ , is reported in this Data Record following the interpolated variable. It represents the combined measurement and interpolation error estimate. In order to distinguish it from an additional decimal digit, it is recorded alphabetically (e.g.: 2 as "B", 3 as "C", etc.).

With respect to the interpolated value of the salinity variable if reported to three decimal digits, the interpolation error estimate is given only when  $\frac{\sigma_i}{\sigma} \geq 2$  (the salinity is then recorded to two decimal places). If less than 2, the mean obtained from the two interpolation parabolas is reported to three decimal places.



## EXPLANATION OF DATA RECORD HEADINGS

## MASTER HEADINGS

(1) C-REF-NO	(6) YR	(11) DEPTH	(16) WAVES 1	(21) AIR T	(26) VIS
(2) CONS. NO	(7) MONTH	(12) MXSAMPD	(17) WAVES 2	(22) WET B	(27) STN
(3) LAT	(8) DAY	(13) NO. DPTH	(18) WND-DIR	(23) WW-CODE	
(4) LON	(9) HR	(14) W-COLOR	(19) WND-FCE	(24) CLD-TPE	
(5) MARSD SQ	(10) C/I	(15) W-TRNSP	(20) BARO	(25) CLD-AMT	(28) HW

- (1) CRUISE REFERENCE NUMBER: Assigned by the Institute. Commences with 001 at the beginning of each year (effective Jan. 1, 1963). Prior to that date the CRN was a number designated by CODC.
- (2) CONSECUTIVE NUMBER: Indicates the chronological order in which the stations were occupied.
- (3) LATITUDE: Indicate the position of the platform at the time of observation.
- (4) LONGITUDE:
- (5) MARSDEN SQUARE: Designates the geographic area code of the observation (see Marsden square chart).
- (6) YEAR:
- (7) MONTH:
- (8) DAY:
- (9) HOUR: The time (Greenwich Mean Time) at which the surface environmental data were recorded. It is reported to tenths of hours (Table 1).  
If an "X" precedes the value for HOUR, (prior to Jan. 1, 1963) it indicates that the reported time is doubtful.
- (10) COUNTRY/INSTITUTE: The International Geophysical Year (IGY) Country Code/Institute Code - see Table 11.
- (11) DEPTH: The sounding reported in metres. If corrected, this is stated in the "GENERAL INFORMATION" chapter of section III. Charted depths are preceded by the letter "C".
- (12) MAXIMUM SAMPLING DEPTH: A code to indicate the deepest sampling depth (used for high speed sorting).
- 00 m - 50 m = 00  
51 m - 150 m = 01  
151 m - 250 m = 02  
etc.

- (13) NUMBER OF DEPTHS: The number of levels observed (this is entered to initiate a computer safety check, guarding against the loss of punch-cards).
- (14) WATER COLOUR: A code based on the percentage of yellow (see table 2 and Note under FIELD "15" below).
- (15) WATER TRANSPARENCY: The depth in metres at which a Secchi disc (white disc, 30 cm. in diameter) just disappears from view, or the optical density expressed in percentage;

NOTE: The "GENERAL INFORMATION" chapter in section III of the data record will state which method was used.

- (16) WAVES 1  
( $d_w d_w P_w H_w$ -code): The direction, period and height of the **wind-propagated** wave system. (See Tables 3, 4 and 5). Ref: World Meteorological Organization Codes 0885, 3155, 1555.
- (17) WAVES 2  
( $d_w d_w P_w H_w$ -code): The direction, period and height of the predominant **non-wind-propagated** wave system. (See Tables 3, 4 and 5). Ref: World Meteorological Organization Codes 0885, 3155, 1555.
- (18) WIND DIRECTION: The true direction to the nearest 10 degrees from which the wind is blowing (wind direction 990 means:—wind variable or direction unknown).
- (19) WIND FORCE  
(WND-FCE): Beaufort notation (See Table 6).
- WIND SPEED  
(WND-SPD): Anemometer reading reported in metres per second. Instrument height reported in "GENERAL INFORMATION" chapter of section III.
- (20) BAROMETER: The barometric pressure reported in millibars: the "GENERAL INFORMATION" chapter in Section III of the data record will state the type of instrument used.
- (21) AIR TEMPERATURE: In degrees Celsius.
- (22) WET BULB: In degrees Celsius.
- (23) ww CODE: Present Weather Code (See Table 7). Ref: WMO Code 4677
- (24) CLOUD TYPE: The type of predominating clouds (See Table 8). Ref: WMO Code 0500.
- (25) CLOUD AMOUNT: The sky coverage in eighths (See Table 9) Ref: WMO Code 2700
- (26) VISIBILITY: Visibility at the surface (See Table 10). Ref: WMO Code 4300.
- (27) STATION: A station reference number, assigned by the institute prior to, or during the survey.
- (28) HOURS AFTER HIGH WATER: Indicates the state of the tide for nearshore observations.

## OBSERVED DATA HEADINGS

(1) GMT	(2) DEPTH	(3) TEMP	(4) SAL	(5) OXYGEN	(6) SGMT
(7) SOUND	(8) $PO_4$	(9) -P-	(10) $NO_2$	(11) $NO_3$	(12) $SiO_3$
				(13) pH.	

NOTE: Headings (1) to (7) will always be present. Headings (8) to (13) appear only when one or more additional chemical entries were made.

(1) G.M.T.: The Greenwich Mean Time of (in-situ) thermometer inversion and sea water sample collection.

When a multiple cast was initiated prior to and continued after midnight, the times indicated are uninterrupted by the change of day and appear beyond 24.0 hours. This will be accompanied by a statement: "MULTIPLE CAST CONTINUED NEXT DAY", which is printed following the last level of observed values.

(2) DEPTH: The depth in metres at the reversal time of deepest cast.

(3) TEMPERATURE: Temperatures from deepsea reversing thermometers, read to 0.01° C. Surface temperature measurement procedures are described in the chapter "OBSERVATION PROCEDURES" of section I, and/or the "GENERAL INFORMATION" chapter of section III. An alphabetical character following the temperature value represents the measurement error estimate referred to in the INTRODUCTION to this section.

(4) SALINITY: Salinity as defined by:  $S = 0.03 + 1.805 C1\%$ , reported in:  
 a. 1/100 parts per 1000, or  
 b. 1/1000 parts per 1000.

In case a: an alphabetical character following the value is the measurement error estimate as referred to under (3).

In case b: no error estimate indication is provided for, but an additional decimal digit takes its place.

(5) OXYGEN: The concentration of dissolved oxygen expressed in millilitres per litre to 2 decimal places.  
 An alphabetical character following the value is the measurement error estimate as referred to under (3).

(6) SIGMA-T: The specific gravity anomaly as defined by:  $(\text{Specific gravity} - 1) \times 10^3$  (e.g.,  $\sigma_t$  reported as 2456, reads 24.56, and corresponds to a specific gravity of 1.02456).

(7) SOUND: The sound velocity is reported in m/sec. to 1 decimal place (e.g., 1437.9 m/sec.). The computation is carried out using Wilson's formula (1960), expressed in terms of temperature, salinity and total pressure.

(8) PO <sub>4</sub>	Phosphate-Phosphorus reported to hundredths of microgram-atoms per litre.
(9) -P-	Total Phosphorus reported to hundredths of microgram-atoms per litre.
(10) NO <sub>2</sub>	Nitrite-Nitrogen reported to hundredths of microgram-atoms per litre — No dissolved nitrogen included —
(11) NO <sub>3</sub>	Nitrate-Nitrogen reported to tenths of microgram-atoms per litre.
(12) SiO <sub>2</sub>	Silicate-Silicon reported in whole microgram-atoms per litre.
(13) pH	The pH value.

NOTE: "TRC" (trace) is reported when a chemical entry has a value less than the standard deviation of measurement for that particular variable.

#### INTERPOLATED DATA HEADINGS

(1) DEPTH	(2) TEMP	(3) SAL	(4) OXYGEN	(5) SGMT	(6) SOUND
(7) DELTA-D	(8) POT-EN	(9) SVA.			

- (1) DEPTH: Standard Oceanographic Depth in whole metres, as well as additional depths: 125, 175, 225, 3500, 4500, 5500, 6500, 7500, 8500, 9500.
- (2) TEMPERATURE: Interpolated value at standard depth, followed by the combined measurement and interpolation error estimate (see "INTRODUCTION" to section II of the data record).
- (3) SALINITY:
- A. The reported salinity values are measured to three decimal places.
    - (i) the interpolation error estimate is less than twice the standard deviation of measurement
      - the interpolated value is reported to three decimal places (e.g., 30.139).
    - (ii) the interpolation error estimate is equal to or greater than twice the standard deviation of measurement.
      - the interpolated value is reported to two decimal places, and followed by the interpolation error estimate (e.g., 29.23 C).
  - B. The reported salinity values are measured to two decimal places and followed by the measurement error estimate.
    - the interpolated value is reported to two decimal places, and followed by the combined measurement and interpolation error estimate (e.g., 30.59 B).
- (4) OXYGEN: Interpolated value at standard depth, followed by the combined measurement and interpolation error estimate (see "Introduction" to section II of the data record).

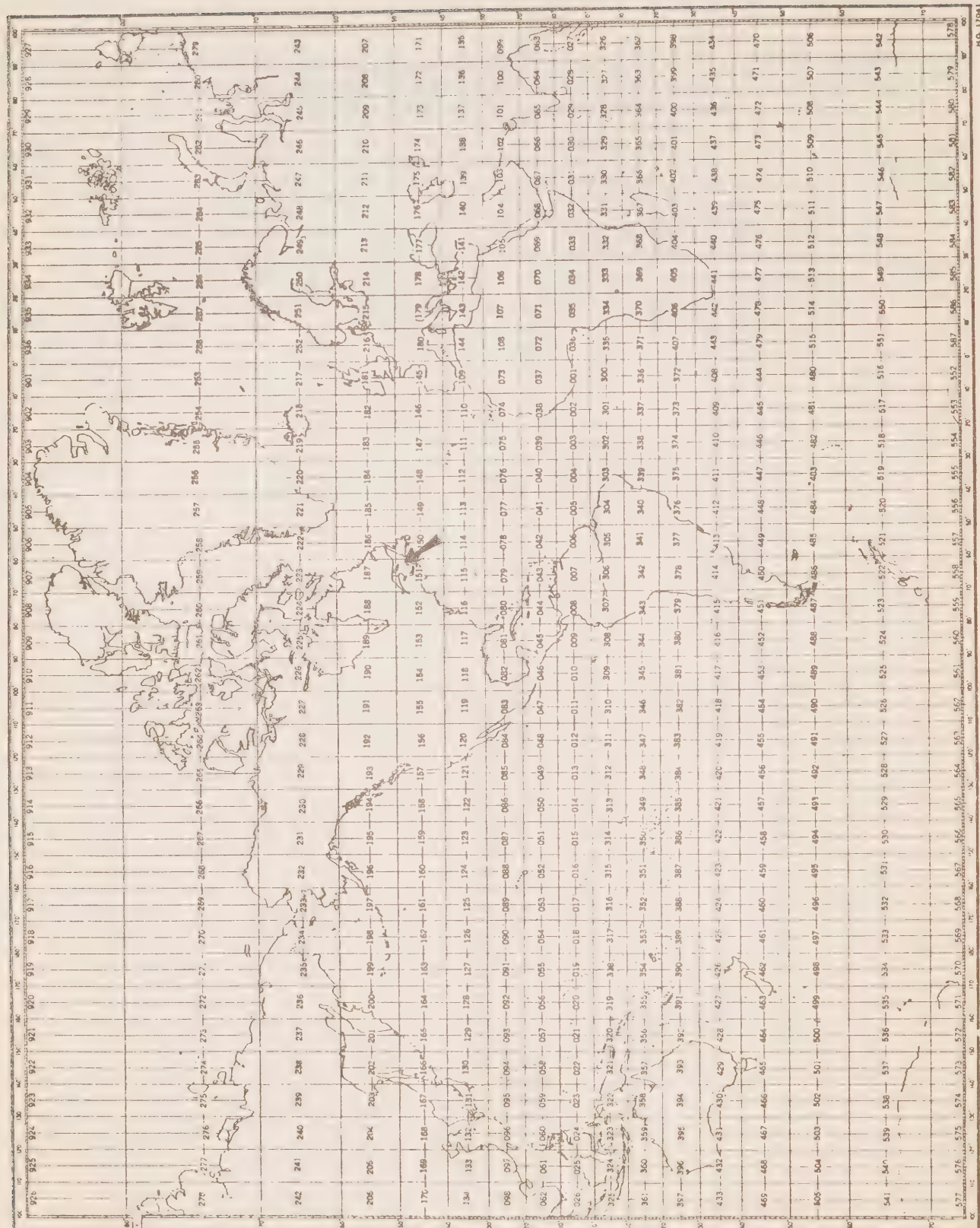


- (5) SIGMA-T: Computed from temperature and salinity values at standard oceanographic depth.
- (6) SOUND VELOCITY: Computed from temperature, salinity and total pressure values at standard oceanographic depth, using Wilson's formula (1960).
- (7) DELTA-D: The geo-potential anomaly as defined by:
- $$\Delta D = \int_0^p \delta dp$$
- $\Delta D$  is expressed in dynamic metres ( $10^5$  ergs/gram) and recorded to three decimal places (e.g., 2.345 dyn. metres).
- (8) POTENTIAL ENERGY ANOMALY: The Potential energy anomaly  $\chi$  as defined by:
- $$\chi = 1/g \int_0^p p \delta dp = \int_0^z \rho p \delta dz$$
- $\chi$  is expressed in units of  $10^8$  ergs/cm<sup>2</sup> and recorded to two decimal places (e.g., 116.44).
- (9) SPECIFIC VOLUME ANOMALY: The specific volume anomaly as defined by:
- $$\delta = \alpha - \alpha_{35.0.P}$$
- $\delta$  is expressed in ml/gr, and conventionally reported as  $10^5 \delta$ , to one decimal place (i.e.,  $\delta$  reported as 1234, reads 123.4, and corresponds to a specific volume anomaly of 0.001234 ml/gr.).

## SPECIAL CHARACTERS

‡ (Record mark): is used to indicate inconsistencies which are printed in an area below the "Observed Data". A corresponding record mark at the extreme left hand side indicates the level at which the inconsistency occurs

\* (Asterisk): this character may occur in the **interpolated** portion of the data record. It is printed at the extreme left hand side of the page, when three or more standard depth levels fall within any one **observed depth interval**. The **third**, and all consequent levels are preceded by the asterisk to indicate that more than **two** machine interpolations were carried out, utilizing the same set of interpolation parabolas. The asterisk will also appear when the last standard depth is an extrapolation and there are at least two interpolations between the last two observed depths.



MARSDEN SQUARE CHART

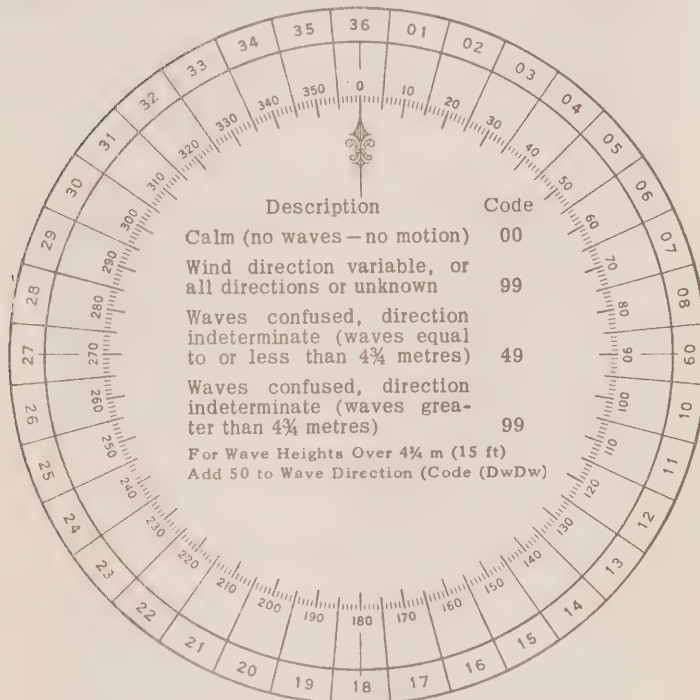
**Table 1**  
**CONVERSION**  
**MINUTES TO  $\frac{1}{10}$  HRS.**

Minutes	Tenths Hrs.
00-03	0
04-08	1
09-15	2
16-20	3
21-27	4
28-32	5
33-39	6
40-44	7
45-51	8
52-56	9
57-59	0 (next HR.)

**Table 2**  
**WATER COLOR CODE**  
**Based on Percentage Yellow**

Code:	Description
00	Deep Blue
10	Blue
20	Greenish Blue
30	Bluish Green
40	Green
50	Light Green
60	Yellowish Green
70	Yellow Green
80	Green Yellow
90	Greenish Yellow
99	Yellow

**Table 3. DIRECTION CODE (dd)**



**NOTE:**

Always use the true direction from which the wind is blowing, or the direction from which Waves I (sea), or Waves II (swell) come.



**Table 4. PERIOD OF THE WAVES ( $P_w$ )**  
(Measure to the Nearest Second)

Code:	Period in Seconds:	Code:	Period in Seconds:
2	5 sec. or less	8	16 or 17 sec.
3	6 or 7 sec.	9	18 or 19 sec.
4	8 or 9 sec.	0	20 or 21 sec.
5	10 or 11 sec.	1	Over 21 sec.
6	12 or 13 sec.	X	Calm, or period not determined
7	14 or 15 sec.		

**Table 5. HEIGHT OF THE WAVES ( $H_w$ )**

- The average value of the wave height (vertical distance between trough and crest) is reported, as obtained from the larger well formed waves of the wave system being observed.
- Each code figure provides for reporting a range of heights. For example: 1 =  $\frac{1}{4}$  m (1 ft) to  $\frac{3}{4}$  m ( $2\frac{1}{2}$  ft); 5 =  $2\frac{1}{4}$  m (7 ft) to  $2\frac{3}{4}$  m (9 ft); 9 =  $4\frac{1}{4}$  m ( $13\frac{1}{2}$  ft) to  $4\frac{3}{4}$  m (15 ft), etc.
- If a wave height comes exactly midway between the heights corresponding to two code figures, the lower code figure is reported; e.g. a height of  $2\frac{3}{4}$  m is reported by code figure 5.

Code			Code
0	Less than ¼ m (1 ft)		0 5 m (16 ft)
1	½ m ( 1½ ft)		1 5½ m (17½ ft)
2	1 m ( 3 ft)		2 6 m (19 ft)
3	1½ m ( 5 ft)	Add	3 6½ m (21 ft)
4	2 m ( 6½ ft)	50	4 7 m (22½ ft)
5	2½ m ( 8 ft)	to	5 7½ m (24 ft)
6	3 m ( 9½ ft)	Dw Dw	6 8 m (25½ ft)
7	3½ m (11 ft)		7 8½ m (27 ft)
8	4 m (13 ft)		8 9 m (29 ft)
9	4½ m (14 ft)		9 9½ m (30½ ft) or more
x	Height not determined		

Table 6. WIND FORCE CODE

The Beaufort force of the wind is estimated from the appearance of the sea surface, according to the table below. This table is only intended as a guide to show roughly what may be expected on the open sea, remote from land. Factors which must be taken into account are the "lag" effect between the wind increasing and the sea getting up; and the influence of "fetch", depth, swell, heavy rain and tide effect on the appearance of the sea. Estimation of the wind force by this method becomes unreliable in shallow water or when close inshore, owing to the tidal effect and the shelter provided by the land.

Code	Appearance of sea if fetch and duration of the blow have been sufficient to develop the sea fully	Description
00	Sea like a mirror	Calm
01	Ripples with the appearance of scales are formed, but without foam crests.	Light Air
02	Small wavelets; crests have a glassy appearance and do not break.	Light Breeze
03	Large wavelets; crests begin to break; foam of glassy appearance; perhaps scattered white horses.	Gentle Breeze
04	Small waves, becoming longer; fairly frequent white horses.	Moderate breeze
05	Moderate waves; many white horses are formed (chance of some spray)	Fresh Breeze
06	Large waves; white foam crests everywhere (probably some spray)	Strong Breeze
07	Sea heaps up and white foam from breaking waves begins to be blown in streaks along the direction of the wind.	Near Gale
08	Moderately high waves; edges of crests begin to break into the spindrift; foam is blown in well-marked streaks along the direction of the wind.	Gale
09	High waves; dense streaks of foam along wind; crests begin to topple, tumble and roll over; spray may affect visibility.	Strong Gale
10	Very high waves with long overhanging crests; foam in great patches blown in dense white streaks along wind; sea surface takes a white appearance; tumbling becomes heavy and shock-like; visibility affected.	Storm
11	Exceptionally high waves (medium sized ships may be lost to view behind waves); sea covered with long white patches of foam lying along the wind; everywhere edges of crests are blown into froth; visibility affected.	Violent Storm
12	Air is filled with foam and spray; sea completely white with driving spray; visibility seriously affected.	Hurricane

Table 7. PRESENT WEATHER

W.W. CODE

## NO PRECIPITATION ON STATION AT TIME OF OBSERVATION

Code figure ww			
No meteors except photometeors	00	Cloud development not observed or not observable	characteristic change of the state of sky during the past hour
	01	Clouds generally dissolving or becoming less developed	
	02	State of sky on the whole unchanged	
	03	Clouds generally forming or developing	
Haze, dust, sand or smoke	04	Visibility reduced by smoke, e.g. veldt or forest fires, industrial smoke or volcanic ashes	
	05	Haze	
	06	Widespread dust in suspension in the air, not raised by wind at or near the station at the time of observation	
	07	Dust or sand raised by wind at or near the station at the time of observation, but no well developed dust whirl(s) or sand whirl(s), and no duststorm or sandstorm seen	
	08	Well developed dust whirl(s) or sand whirl(s) seen at or near the station during the preceding hour or at the time of observation, but no dustorm or sandstorm	
	09	Duststorm or sandstorm within sight at the time of observation, or at the station during the preceding hour	
	10	Mist	
	11	Patches of	shallow fog or ice fog at the station, whether on land or sea, not deeper than about 2 metres on land or 10 metres at sea
	12	More of less continuous	
	13	Lightning visible, no thunder heard	
	14	Precipitation within sight, not reaching the ground or the surface of the sea	
	15	Precipitation within sight, reaching the ground or the surface of the sea, but distant (i.e. estimated to be more than 5 km) from the station	
	16	Precipitation within sight, reaching the ground or the surface of the sea, near to, but not at the station	
	17	Thunderstorm, but no precepitation at the time of observation	
	18	Squalls	at or within sight of the station during the preceding hour or at the time of observation
	19	Funnel clouds	
ww = 20 - 29			
	20	Precipitation, fog, ice fog or thunderstorm at the station during the preceding hour but not at the time of observation	
	21	Drizzle (not freezing) or snow grains	not falling as shower(s)
	22	Rain (not freezing)	
	23	Snow	
	24	Rain and snow or ice pellets, type (a)	
	25	Freezing drizzle or freezing rain	
	26	Shower(s) of rain	
	27	Shower(s) of snow, or of rain and snow	
	28	Shower(s) of hail, or of rain and hail	
	29	Fog or ice fog	
ww = 30 - 39			
	30	Duststorm, sandstorm, drifting or blowing snow	
	31	Slight or moderate duststorm or sandstorm	- has decreased during the preceding hour
	32		
	33		- no appreciable change during the preceding hour
	34		
	35		- has begun or has increased during the preceding hour
	36		
	37		- has decreased during the preceding hour
	38		
	39		- no appreciable change during the preceding hour
			- has begun or has increased during the preceding hour
	36	Slight or moderate blowing snow	generally low (below eye level)
	37	Heavy drifting snow	
	38	Slight or moderate blowing snow	generally high (above eye level)
	39	Heavy blowing snow	
ww = 40 - 49			
	40	Fog or ice fog at the time of observation	
	41	Fog or ice fog at a distance at the time of observation, but not at the station during the preceding hour, the fog or ice fog extending to a level above that of the observer	
	42	Fog or ice fog in patches	
	43	Fog or ice fog, sky visible	has become thinner during the preceding hour
	44	Fog or ice fog, sky invisible	
	45	Fog or ice fog, sky visible	no appreciable change during the preceding hour
	46	Fog or ice fog, sky invisible	
	47	Fog or ice fog, sky visible	has begun or has become thicker during the preceding hour
	48	Fog or ice fog, sky invisible	
	49	Fog, depositing rime, sky visible	
		Fog, depositing rime, sky invisible	

## NO PRECIPITATION ON STATION AT TIME OF OBSERVATION

## PRECIPITATION ON STATION AT TIME OF OBSERVATION

## ww = 50 - 59 Drizzle

- |    |  |   |                                      |
|----|--|---|--------------------------------------|
| 50 | Drizzle, not freezing, intermittent          | { | slight at time of observation        |
| 51 | Drizzle, not freezing, continuous            |   |                                      |
| 52 | Drizzle, not freezing, intermittent          | { | moderate at time of observation      |
| 53 | Drizzle, not freezing, continuous            |   |                                      |
| 54 | Drizzle, not freezing, intermittent          | { | heavy (dense) at time of observation |
| 55 | Drizzle, not freezing, continuous            |   |                                      |
| 56 | Drizzle, freezing, slight                    |   |                                      |
| 57 | Drizzle, freezing, moderate or heavy (dense) |   |                                      |
| 58 | Drizzle and rain, slight                     |   |                                      |
| 59 | Drizzle and rain, moderate or heavy          |   |                                      |

## ww = 60 - 69 Rain

- |    |   |   |                                 |
|----|---|---|---------------------------------|
| 60 | Rain, not freezing, intermittent            | { | slight at time of observation   |
| 61 | Rain, not freezing, continuous              |   |                                 |
| 62 | Rain, not freezing, intermittent            | { | moderate at time of observation |
| 63 | Rain, not freezing, continuous              |   |                                 |
| 64 | Rain, not freezing, intermittent            | { | heavy at time of observation    |
| 65 | Rain, not freezing, continuous              |   |                                 |
| 66 | Rain, freezing, slight                      |   |                                 |
| 67 | Rain, freezing, moderate or heavy           |   |                                 |
| 68 | Rain or drizzle and snow, slight            |   |                                 |
| 69 | Rain or drizzle and snow, moderate or heavy |   |                                 |

## 70 - 79 Solid precipitation not in showers

- |    |   |   |                                 |
|----|---|---|---------------------------------|
| 70 | Intermittent fall of snow flakes                      | { | slight at time of observation   |
| 71 | Continuous fall of snow flakes                        |   |                                 |
| 72 | Intermittent fall of snow flakes                      | { | moderate at time of observation |
| 73 | Continuous fall of snow flakes                        |   |                                 |
| 74 | Intermittent fall of snow flakes                      | { | heavy at time of observation    |
| 75 | Continuous fall of snow flakes                        |   |                                 |
| 76 | Ice prisms (with or without fog)                      |   |                                 |
| 77 | Snow grains (with or without fog)                     |   |                                 |
| 78 | Isolated starlike snow crystals (with or without fog) |   |                                 |
| 79 | Ice pellets, type (a)                                 |   |                                 |

## ww = 80 - 99 Showery precipitation, or precipitation with current or recent thunderstorm

- |    |  |   |   |
|----|--|---|---|
| 80 | Rain shower(s), slight   |   |   |
| 81 | Rain shower(s), moderate or heavy  |   |   |
| 82 | Rain shower(s), violent  |   |   |
| 83 | Shower(s) of rain and snow mixed, slight   |   |   |
| 84 | Shower(s) of rain and snow mixed, moderate or heavy  |   |   |
| 85 | Snow shower(s), slight   |   |   |
| 86 | Snow shower(s), moderate or heavy  |   |   |
| 87 | Shower(s) of snow pellets or ice pellets, type (b), with or without rain or rain and snow mixed  | { | - slight  |
| 88 |  |   |   |
| 89 | Shower(s) of hail, with or without rain or rain and snow mixed, not associated with thunder      | { | - moderate or heavy   |
| 90 |  |   |   |
| 91 | Slight rain at time of observation   |   |   |
| 92 | Moderate or heavy rain at time of observation  | { | thunderstorm during the preceding hour but not at time of observation |
| 93 | Slight snow, or rain and snow mixed or hail at time of observation                               |   |   |
| 94 | Moderate or heavy snow, or rain and snow mixed or hail at time of observation                    | { | - moderate or heavy   |
| 95 | Thunderstorm, slight or moderate, without hail, but with rain and/or snow at time of observation |   |   |
| 96 | Thunderstorm, slight or moderate, with hail at time of observation                               | { | thunderstorm at time of observation                                   |
| 97 | Thunderstorm, heavy, without hail, but with rain and/or snow at time of observation              |   |   |
| 98 | Thunderstorm, combined with duststorm or sandstorm at time of observation                        |   |   |
| 99 | Thunderstorm, heavy, with hail at time of observation  |   |   |

## PRECIPITATION ON STATION AT TIME OF OBSERVATION



Table 8. CLOUD TYPE CODE

Code	Cloud Type	Code	Cloud Type
0	Cirrus ..... Ci	5	Nimbostratus ..... Ns
1	Cirrocumulus ..... Cc	6	Stratocumulus ..... Sc
2	Cirrostratus ..... Cs	7	Stratus ..... St
3	Alto cumulus ..... Ac	8	Cumulus ..... Cu
4	Altostratus ..... As	9	Cumulonimbus ..... Cb
X	Cloud not visible owing to darkness, fog, duststorm, sandstorm, or other analogous phenomena		

Table 9. CLOUD AMOUNT CODE

Code	Cloud Cover	Code	Cloud Cover
0	0	6	6 oktas
1	1 okta or less, but not zero	7	7 oktas or more, but not 8 oktas
2	2 oktas	8	8 oktas
3	3 oktas	9	Sky obscured, or cloud amount cannot be estimated
4	4 oktas		
5	5 oktas		

Note: 1 okta =  $\frac{1}{8}$  of the sky covered

Table 10. VISIBILITY

Code	Estimate of hor. Visibility
0	Less than 50 metres (less than 55 yards)
1	50-200 metres (approx. 55-220 yards)
2	200-500 metres (approx. 220-550 yards)
3	500-1,000 metres (approx. 550 yards- $\frac{1}{2}$ n.m.)
4	1-2 km (approx. $\frac{3}{4}$ -1 n.m.)
5	2-4 km (approx. 1-2 n.m.)
6	4-10 km (approx. 2-6 n.m.)
7	10-20 km (approx. 6-12 n.m.)
8	20-50 km (approx. 12-30 n.m.)
9	50 km or more (30 n.m. or more)

Note: n.m. = nautical mile

TABLE 11. INSTITUTE CODE

Code	Institute
01	Marine Ecology Laboratory, Bedford Institute
02	Pacific Oceanographic Group
03	Biological Station, St. Andrews, N.B.
04	Arctic Biological Station, Ste. Anne de Bellevue, P.Q.
05	Biological Station, St. John's Nfld.
06	Station de Biologie Marine, Grande Riviere, P.Q.
07	Marine Sciences Branch, Central Region
08	Defence Research Establishment, Atlantic
09	Defence Research Establishment, Pacific
10	Atlantic Oceanographic Laboratory, Bedford Institute
11	Polar Continental Shelf Project
12	Great Lakes Institute
13	Institute of Oceanography, University of British Columbia
14	Institute of Oceanography, Dalhousie University
15	Marine Sciences Branch, Pacific Region
16	Department of Transport
17	Marine Sciences Centre, McGill University
18	Canadian Forces Maritime Command, East Coast
19	Canadian Forces Maritime Command, West Coast
20	Ontario Water Resources Commission
21	Dept. of National Health and Welfare
22	Inland Waters Branch, Dept. of Energy, Mines and Resources.



### SECTION III

Serial oceanographic data





GENERAL INFORMATION

<u>Institute:</u>	Atlantic Oceanographic Laboratory
<u>Observation platform:</u>	MV "Theta"
<u>Vessel's cruising speed:</u>	10 knots
<u>Total number of stations occupied:</u>	42
<u>Anemometer height above sea level:</u>	11 metres
<u>Barometer readings:</u>	Aneroid Barometer (corrected)
<u>Air temperature:</u>	Sling Psychrometer
<u>Surface sea water temperature:</u>	Bucket sample (deck thermometer)

The following Standard Deviations were used to express both measurement and interpolation error estimates:

Temperature	0.02
Salinity	0.003



C-REF-NO 003	YR 1966	DEPTH 138	WAVES 1 3121	AIR T 17.0	VIS 6
CONS. NO 001	MONTH 8	MXSAMPD 01	WAVES 2 00X0	WET B 16.0	STN
LAT 47-025N	DAY 29	NO.DPTH 9	WND-DIR 310	WW-CODE 02	
LON 60-216W	HR 19.9	W-COLOR	WND-SPD 10	CLD-TPE 9	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1013.0	CLD-AMT 6	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
199	0000	180	29677		2123	15102
199	0010	1789	29608		2120	15099
199	0021	1785	29640		2124	15100
199	0030		29908			
199	0040	0354	30774		2450	14599
199	0050	0185	31310		2505	14534
199	0075	0126	32257		2585	14524
199	0101	0138	32641		2615	14539
199	0130	0183	33272		2662	14573

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1800	29677		2123	15102	0000	00000	6568
0010	1789	29608		2120	15099	0066	00003	6596
0020	1798 D	29628		2120	15104	0132	00014	6603
0030	1129 I	29908		2279	14891	0191	00028	5078
0050	0185	31310		2505	14534	0271	00059	2915
0075	0126	32257		2585	14524	0335	00098	2158
0100	0137	3263 B		2614	14538	0386	00143	1881
0125	0169	3321 H		2658	14565	0428	00191	1467



C-REF-NO 003	YR 1966	DEPTH 199	WAVES 1 3021	AIR T 16.3	VIS 6
CONS. NO 002	MONTH 8	MXSAMPD 02	WAVES 2 00X0	WET B 14.0	STN
LAT 47-070N	DAY 29	NO.DPTH 10	WND-DIR 300	WW-CODE 02	
LON 60-130W	HR 21.5	W-COLOR	WND-SPD 07	CLD-TPE 9	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1013.0	CLD-AMT 6	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
215	0000	178	29557		2119	15094
215	0010	1791	29497		2112	15099
215	0021	1761	29556		2123	15092
215	0030	0512	30585		2419	14661
215	0040	0205	31251		2499	14540
215	0050	0146	31935		2558	14525
215	0075	0169	32464		2599	14546
215	0101	0138	32619		2613	14539
215	0150	0166	33361		2671	14570
215	0183	0293	33880		2702	14638

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1780	29557		2119	15094	0000	00000	6610
0010	1791	29497		2112	15099	0067	00003	6681
0020	1799 I	2952 F		2111	15103	0134	00014	6684
0030	0512	30585		2419	14661	0186	00026	3738
0050	0146	31935		2558	14525	0248	00050	2415
0075	0169	32464		2599	14546	0304	00085	2028
0100	0139	3262 B		2613	14539	0353	00129	1894
0125	0133 B	3294 H		2640	14545	0397	00180	1641
0150	0166	33361		2671	14570	0435	00233	1347
0175	0258	3373 E		2693	14619	0467	00285	1144

C-REF-NO 003	YR 1966	DEPTH 267	WAVES 1 3121	AIR T 16.2	VIS 6
CONS. NO 003	MONTH 8	MXSAMPD 02	WAVES 2 00X0	WET B 14.0	STN
LAT 47-122N	DAY 29	NO.DPTH 12	WND-DIR 310	WW-CODE 03	
LON 60-041W	HR 22.9	W-COLOR	WND-SPD 05	CLD-TPE 9	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1014.0	CLD-AMT 7	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
229	0000	158	30667		2249	15046
229	0010	1601	30664		2244	15055
229	0021	1554	30862		2270	15044
229	0030	0659	31284		2457	14730
229	0040	0368	31622		2516	14616
229	0050	0259	32289		2578	14580
229	0075	0167	32491		2601	14546
229	0100	0108	32857		2634	14529
229	0150	0190	33429		2674	14581
229	0201	0334	34047		2712	14661
229	0225	0360	34148		2717	14677
229	0250	0393	34292		2725	14697

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1580	30667		2249	15046	0000	00000	5363
0010	1601	30664		2244	15055	0054	00003	5411
0020	1584 G	30832		2261	15053	0108	00011	5254
0030	0659	31284		2457	14730	0151	00022	3377
0050	0259	32289		2578	14580	0207	00043	2225
0075	0167	32491		2601	14546	0260	00077	2006
0100	0108	32857		2634	14529	0307	00118	1691
0125	0129 D	3315 D		2657	14546	0347	00164	1478
0150	0190	33429		2674	14581	0382	00213	1313
0175	0264 D	3376 H		2695	14623	0413	00264	1120
0200	0331	34037		2711	14659	0439	00315	0976
0225	0360	34148		2717	14677	0463	00367	0922
0250	0393	34292		2725	14697	0485	00421	0850

C-REF-NO 003 YR 1966 DEPTH 471 WAVES 1 2822 AIR T 17.0 VIS 4  
 CONS. NO 004 MONTH 8 MXSAMPD 05 WAVES 2 00X0 WET B 14.5 STN  
 LAT 47-171N DAY 30 NO.DPTH 16 WND-DIR 280 WW-CODE 01  
 LON 59-560W HR 00.6 W-COLOR WND-SPD 06 CLD-TPE 9  
 MARSD SQ 150 C/I 1810 W-TRNSP BARO 1014.5 CLD-AMT 5 HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
006	0000	157	30927		2271	15046
006	0010	1586	30882		2264	15053
006	0020	1586	30886		2264	15054
006	0030	0813	31722		2471	14797
006	0040	0409	32055		2546	14639
006	0050	0260	32373		2585	14581
006	0075	0094	32494		2606	14513
006	0100	0059	32787		2631	14506
006	0150	0186	33485		2679	14580
006	0200	0352	34163		2719	14670
006	0225	0389	34341		2730	14692
006	0249	0413	34445		2735	14708
006	0300	0420	34616		2748	14721
006	0349	0421	34717		2756	14731
006	0399	0419	34792		2762	14739
006	0455	0421	34788		2762	14750

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1570	30927		2271	15046	0000	00000	5151
0010	1586	30882		2264	15053	0052	00003	5220
0020	1586	30886		2264	15054	0104	00011	5220
0030	0813	31722		2471	14797	0147	00021	3250
0050	0260	32373		2585	14581	0201	00042	2163
0075	0094	32494		2606	14513	0253	00075	1959
0100	0059	32787		2631	14506	0300	00116	1716
0125	0104 E	3313 C		2656	14535	0340	00162	1482
0150	0186	33485		2679	14580	0374	00211	1268
0175	0274 C	3385 F		2701	14628	0404	00259	1062
0200	0352	34163		2719	14670	0429	00307	0901
0225	0389	34341		2730	14692	0450	00354	0807
0250	0413	34449		2736	14708	0470	00402	0753
0300	0420	34616		2748	14721	0505	00500	0640
0400	0420	3478 B		2762	14740	0564	00709	0525

C-REF-NO 003	YR 1966	DEPTH 495	WAVES 1 2822	AIR T 16.5	VIS 6
CONS. NO 005	MONTH 8	MXSAMPD 05	WAVES 2 00X0	WET B 14.6	STN
LAT 47-220N	DAY 30	NO.DPTH 16	WND-DIR 280	WW-CODE 01	
LON 59-471W	HR 02.2	W-COLOR	WND-SPD 06	CLD-TPE 9	
MARSD SQ 150	C/I 1810	W-TRNSP	BARO 1014.8	CLD-AMT 2	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
022	0000	145	31210		2318	15011
022	0010	1472	31195		2313	15020
022	0021	0852	31690		2463	14810
022	0030	0454	32045		2541	14656
022	0040	0236	32146		2568	14566
022	0050	0140	32298		2587	14527
022	0075	0102	32693		2621	14520
022	0100	0087	32958		2644	14521
022	0150	0251	33714		2692	14612
022	0200	0389	34248		2722	14687
022	0225	0409	34400		2732	14701
022	0249	0424	34510		2739	14713
022	0299	0422	34651		2751	14722
022	0348	0420	34745		2758	14731
022	0398	0421	34784		2761	14740
022	0474	0422	34790		2762	14753

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1450	31210		2318	15011	0000	00000	4699
0010	1472	31195		2313	15020	0047	00002	4756
0020	0919 F	3164 C		2448	14834	0089	00008	3465
0030	0454	32045		2541	14656	0119	00016	2581
0050	0140	32298		2587	14527	0167	00035	2135
0075	0102	32693		2621	14520	0216	00066	1812
0100	0087	32958		2644	14521	0259	00105	1602
0125	0154 F	3333 G		2669	14560	0297	00147	1362
0150	0251	33714		2692	14612	0328	00191	1146
0175	0330 B	34014		2709	14654	0355	00236	0990
0200	0389	34248		2722	14687	0379	00281	0874
0225	0409	34400		2732	14701	0400	00327	0783
0250	0424	34514		2740	14713	0418	00373	0716
0300	0422	34653		2751	14722	0452	00467	0614
0400	0420	3479 B		2762	14740	0509	00670	0519



C-REF-NO 003	YR 1966	DEPTH 491	WAVES 1 2321	AIR T 16.1	VIS 6
CONS. NO 006	MONTH 8	MXSAMPD 05	WAVES 2 00X0	WET B 15.3	STN
LAT 47-268N	DAY 30	NO.DPTH 16	WND-DIR 230	WW-CODE 00	
LON 59-376W	HR 03.9	W-COLOR	WND-SPD 02	CLD-TPE X	
MARSD SQ 150	C/I 1810	W-TRNSP	BARO 1014.5	CLD-AMT 9	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
039	0000	143	31504		2345	15008
039	0010	1429	31498		2345	15010
039	0021	0374	32085		2552	14622
039	0030	0145	32162		2576	14524
039	0040	0243	32413		2589	14573
039	0050	0176	32465		2598	14546
039	0075	0111	32618		2615	14523
039	0100	0090	32893		2638	14521
039	0150	0234	33624		2687	14603
039	0201	0355	34113		2715	14671
043	0225	0411	34365		2729	14702
043	0250	0422	34434		2733	14711
043	0300	0417	34601		2747	14720
043	0349	0420	34677		2753	14730
043	0400	0421	34752		2759	14740
043	0475	0423	34758		2759	14753

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1430	31504		2345	15008	0000	00000	4444
0010	1429	31498		2345	15010	0045	00002	4448
0020	0475 I	3203 E		2537	14663	0080	00007	2612
0030	0145	32162		2576	14524	0105	00013	2242
0050	0176	32465		2598	14545	0148	00031	2032
0075	0111	32618		2615	14523	0197	00062	1874
0100	0090	32893		2638	14521	0241	00102	1653
0125	0148 F	3326 G		2664	14556	0280	00146	1412
0150	0234	33624		2687	14603	0313	00192	1200
0175	0295	3388 E		2702	14637	0341	00239	1063
0200	0353	34104		2714	14669	0366	00288	0946
0225	0411	34365		2729	14702	0389	00336	0811
0250	0422	34434		2733	14711	0409	00385	0774
0300	0417	34601		2747	14720	0445	00485	0648
0400	0421	34752		2759	14740	0505	00700	0550

C-REF-NO 003	YR 1966	DEPTH 451	WAVES 1 2321	AIR T 15.9	VIS 6
CONS. NO 007	MONTH 8	MXSAMPD 04	WAVES 2 00X0	WET B 14.8	STN
LAT 47-317N	DAY 30	NO.DPTH 15	WND-DIR 230	WW-CODE 00	
LON 59-286W	HR 05.7	W-COLOR	WND-SPD 02	CLD-TPE X	
MARSD SQ 150	C/I 1810	W-TRNSP	BARO 1014.0	CLD-AMT 9	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
057	0000	130	31520		2372	14965
057	0010	1289	31537		2376	14963
057	0021	0367	32347		2573	14622
057	0030	0210	32458		2595	14557
057	0040	0159	32525		2604	14537
057	0050	0124	32551		2609	14523
057	0075	0089	32690		2622	14514
057	0100	0092	32950		2643	14523
057	0150	0244	33628		2686	14608
057	0201	0396	34191		2717	14689
057	0225	0426	34336		2725	14708
057	0250	0436	34501		2737	14718
057	0300	0425	34589		2745	14723
057	0350	0427	34730		2756	14734
057	0392	0429	34750		2758	14742

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1300	31520		2372	14965	0000	00000	4183
0010	1289	31537		2376	14963	0042	00002	4153
0020	0454 I	3227 G		2559	14658	0075	00007	2409
0030	0210	32458		2595	14557	0097	00012	2061
0050	0124	32551		2609	14523	0138	00029	1933
0075	0089	32690		2622	14514	0185	00059	1807
0100	0092	32950		2643	14523	0228	00097	1611
0125	0156 D	3328 E		2665	14560	0266	00140	1399
0150	0244	33628		2686	14608	0298	00186	1205
0175	0326 C	3393 C		2703	14652	0327	00234	1047
0200	0394	34182		2716	14688	0352	00281	0928
0225	0426	34336		2725	14708	0374	00330	0849
0250	0436	34501		2737	14718	0394	00379	0738
0300	0425	34589		2745	14723	0429	00478	0666

C-REF-NO 003	YR 1966	DEPTH 118	WAVES 1 0021	AIR T 13.7	VIS 6
CONS. NO 008	MONTH 8	MXSAMPD 01	WAVES 2 00X0	WET B 12.8	STN
LAT 47-366N	DAY 30	NO.DPTH 7	WND-DIR CALM	WW-CODE 00	
LON 59-198W	HR 07.2	W-COLOR	WND-SPD 00	CLD-TPE X	
MARSD SQ 150	C/I 1810	W-TRNSP	BARO 1014.0	CLD-AMT 9	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
072	0000	115	31621		2408	14915
072	0010	0738	32031		2505	14768
072	0020	0654	32157		2526	14738
072	0030	0576	32225		2541	14709
072	0040	0509	32265		2552	14684
072	0050	0308	32452		2587	14603
072	0075	0171	32675		2615	14550

#WAVES NOT COMPATIBLE WITH WIND

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1150	31621		2408	14915	0000	00000	3841
0010	0738	32031		2505	14768	0034	00002	2916
0020	0654	32157		2526	14738	0062	00006	2717
0030	0576	32225		2541	14709	0089	00013	2575
0050	0308	32452		2587	14603	0136	00032	2141
0075	0171	32675		2615	14550	0187	00064	1870

C-REF-NO 003	YR 1966	DEPTH 451	WAVES 1 00X1	AIR T 15.1	VIS 7
CONS. NO 009	MONTH 8	MXSAMPD 04	WAVES 2 00X0	WET B 14.3	STN
LAT 47-317N	DAY 30	NO.DPTH 16	WND-DIR 260	WW-CODE 03	
LON 59-286W	HR 09.5	W-COLOR	WND-SPD 02	CLD-TPE 1	
MARSD SQ 150	C/I 1810	W-TRNSP	BARD 1012.3	CLD-AMT 1	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
094	0000	129	31525		2375	14962
094	0010	1290	31514		2374	14964
094	0021	0533	32300		2552	14691
094	0030	0267	32394		2586	14581
094	0040	0176	32485		2600	14544
094	0050	0153	32530		2605	14536
094	0075	0096	32675		2620	14517
094	0100	0091	32853		2635	14521
094	0150	0223	33569		2683	14598
094	0200	0400	34210		2718	14691
094	0225	0424	34350		2727	14707
094	0250	0433	34485		2736	14717
094	0300	0426	34624		2748	14724
094	0349	0426	34722		2756	14733
094	0399	0430	34744		2757	14743
094	0434	0429	34748		2758	14749

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1290	31525		2375	14962	0000	00000	4161
0010	1290	31514		2374	14964	0042	00002	4171
0020	0608 I	3223 G		2538	14721	0076	00007	2611
0030	0267	32394		2586	14581	0100	00013	2151
0050	0153	32530		2605	14536	0141	00030	1967
0075	0096	32675		2620	14517	0189	00060	1822
0100	0091	32853		2635	14521	0233	00100	1684
0125	0142 C	3319 H		2658	14553	0273	00145	1463
0150	0223	33569		2683	14598	0307	00192	1233
0175	0319 E	3392 F		2703	14649	0336	00240	1048
0200	0400	34210		2718	14691	0360	00288	0914
0225	0424	34350		2727	14707	0382	00336	0836
0250	0433	34485		2736	14717	0402	00384	0747
0300	0426	34624		2748	14724	0437	00482	0641
0400	0429	3475 B		2758	14743	0498	00698	0558



C-REF-NO 003	YR 1966	DEPTH 490	WAVES 1 2121	AIR T 17.3	VIS 7
CONS. NO 010	MONTH 8	MXSAMPD 05	WAVES 2 00X0	WET B 14.2	STN
LAT 47-266N	DAY 30	NO.DPTH 16	WND-DIR 210	WW-CODE 02	
LON 59-373W	HR 11.0	W-COLOR	WND-SPD 06	CLD-TPE 1	
MARSD SQ 150	C/I 1810	W-TRNSP	BARO 1012.2	CLD-AMT 1	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
110	0000	147	31573		2342	15022
110	0010	1464	31573		2343	15022
110	0021	1464	31547		2341	15023
110	0030	0642	31926		2510	14732
110	0040	0174	32154		2574	14539
110	0050	0173	32298		2585	14542
110	0075	0174	32469		2599	14549
110	0100	0097	32854		2635	14524
110	0150	0231	33631		2687	14602
110	0201		34185			
110	0225	0407	34383		2731	14700
110	0250	0424	34495		2738	14713
110	0301	0418	34568		2745	14720
110	0350	0420	34732		2757	14731
110	0401	0420	34760		2760	14740
110	0477	0421	34785		2761	14753

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1470	31573		2342	15022	0000	00000	4473
0010	1464	31573		2343	15022	0045	00002	4463
0020	1487 H	3154 C		2336	15031	0090	00009	4536
0030	0642	31926		2510	14732	0127	00018	2877
0050	0173	32298		2585	14542	0178	00038	2157
0075	0174	32469		2599	14549	0231	00072	2028
0100	0097	32854		2635	14524	0277	00113	1686
0125	0141 H	3326 C		2664	14553	0316	00158	1409
0150	0231	33631		2687	14602	0349	00204	1192
0175	0302 C	33929		2705	14641	0377	00250	1029
0200	0360 C	34176		2719	14674	0401	00297	0900
0225	0407	34383		2731	14700	0423	00343	0794
0250	0424	34495		2738	14713	0442	00390	0730
0300	0418	34567		2744	14720	0477	00490	0675
0400	0420	34760		2760	14740	0539	00707	0542

C-REF-NO 003	YR 1966	DEPTH 490	WAVES 1 2221	AIR T 18.7	VIS 6
CONS. NO 011	MONTH 8	MXSAMPD 05	WAVES 2 00X0	WET B 15.8	STN
LAT 47-217N	DAY 30	NO.DPTH 16	WND-DIR 220	WW-CODE 03	
LON 59-467W	HR 12.6	W-COLOR	WND-SPD 07	CLD-TPC 3	
MARSD SQ 150	C/I 1810	W-TRNSP	BARO 1011.3	CLD-AMT 5	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
126	0000	153	30934		2280	15034
126	0010	1482	30949		2292	15020
126	0020	1282	31354		2363	14960
126	0029	0459	31865		2526	14656
126	0039	0271	32117		2563	14581
126	0049	0175	32301		2585	14543
126	0074	0105				
126	0098	0100	32968		2644	14526
126	0148	0262	33734		2693	14617
126	0197	0390	34252		2722	14687
126	0221	0411	34402		2732	14702
126	0246	0422	34499		2739	14712
126	0295	0419	34627		2749	14720
126	0345	0420	34725		2757	14730
126	0394	0420	34783		2761	14739
126	0469	0420	34779		2761	14751

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1530	30934		2280	15034	0000	00000	5063
0010	1482	30949		2292	15020	0050	00003	4957
0020	1282	31354		2363	14960	0097	00009	4277
0030	0421 E	3190 B		2533	14641	0131	00018	2658
0050	0169	32316		2587	14540	0180	00037	2140
0075	0104	3267 G		2620	14520	0230	00069	1827
0100	0105	33000		2646	14529	0273	00107	1580
0125	0175 F	3339 E		2672	14570	0309	00149	1330
0150	0269	33760		2695	14620	0340	00192	1126
0175	0341 B	34051		2711	14660	0367	00236	0973
0200	0394	34274		2724	14689	0390	00280	0859
0225	0413	34420		2733	14703	0410	00325	0772
0250	0422	34512		2740	14712	0429	00371	0716
0300	0419	34638		2750	14721	0463	00465	0622
0400	0420	34784		2761	14740	0521	00671	0525

C-REF-NO 003	YR 1966	DEPTH 471	WAVES 1 2021	AIR T 19.3	VIS 7
CONS. NO 012	MONTH 8	MXSAMPD 05	WAVES 2 00X0	WET B 16.4	STN
LAT 47-171N	DAY 30	NO. OPTH 16	WND-DIR 200	WW-CODE 01	
LON 59-551W	HR 14.1	W-COLOR	WND-SPD 06	CLD-TPE 2	
MARSD SQ 150	C/I 1810	W-TRNSP	BARO 1010.7	CLD-AMT 3	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
140	0000	166	30864		2246	15074
140	0010	1570	30851		2265	15047
140	0020	1555	30848		2268	15044
140	0029	1008	31668		2436	14869
140	0039	0236	32004		2557	14564
140	0050	0258	32275		2577	14579
140	0074	0109	32543		2609	14521
140	0099	0095	32876		2636	14523
140	0148	0205	33531		2681	14589
140	0198	0343	34080		2713	14665
140	0222	0397	34342		2729	14695
140	0247	0414	34453		2736	14708
140	0297	0420	34625		2749	14721
140	0347	0420	34719		2756	14730
140	0396	0420	34766		2760	14739
140	0451	0420	34784		2761	14748

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT. EN	SVA
0000	1660	30864		2246	15074	0000	00000	5389
0010	1570	30851		2265	15047	0053	00003	5209
0020	1555	30848		2268	15044	0105	00011	5183
0030	0918 G	3172 C		2455	14836	0148	00021	3404
0050	0258	32275		2577	14579	0205	00043	2235
0075	0107	32556		2610	14520	0257	00076	1919
0100	0096	32890		2638	14524	0302	00116	1659
0125	0140 C	3323 B		2662	14553	0341	00161	1428
0150	0211	33554		2683	14592	0375	00208	1234
0175	0280 B	3384 B		2700	14630	0404	00256	1080
0200	0348	34105		2715	14667	0430	00305	0942
0225	0400	34360		2730	14697	0452	00353	0804
0250	0415	34465		2737	14709	0471	00400	0743
0300	0420	34632		2749	14721	0506	00497	0628
0400	0420	34771		2760	14740	0564	00706	0534

C-REF-NO 003	YR 1966	DEPTH 204	WAVES 1 1922	AIR T 21.2	VIS 6
CONS. NO 013	MONTH 8	MXSAMPD 02	WAVES 2 00X0	WET B 16.4	STN
LAT 47-072N	DAY 30	NO.DPTH 10	WND-DIR 190	WW-CODE 02	
LON 60-127W	HR 16.9	W-COLOR	WND-SPD 06	CLD-TPE 2	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1008.3	CLD-AMT 5	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
169	0000	179	29458		2109	15096
169	0010	1742	29547		2127	15085
169	0021	1237	30046		2271	14929
169	0030	0491	30614		2424	14653
169	0040	0217	31201		2494	14545
169	0050	0157	31743		2542	14527
169	0075	0185	32460		2597	14554
169	0101	0127	32692		2620	14535
171	0150	0199	33417		2673	14585
171	0183	0354	34145		2717	14668

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1790	29458		2109	15096	0000	00000	6705
0010	1742	29547		2127	15085	0066	00003	6535
0020	1302	29988		2254	14950	0126	00012	5320
0030	0491	30614		2424	14653	0171	00023	3695
0050	0157	31743		2542	14527	0234	00048	2568
0075	0185	32460		2597	14554	0292	00084	2042
0100	0129	3269 B		2619	14536	0341	00128	1833
0125	0136	32997		2644	14547	0384	00177	1602
0150	0199	33417		2673	14585	0421	00229	1329
0175	0306	33953		2707	14643	0450	00277	1015



C-REF-NO 003	YR 1966	DEPTH 142	WAVES 1 1621	AIR T 22.2	VIS 6
CONS. NO 014	MONTH 8	MXSAMPD 01	WAVES 2 00X0	WET B 18.0	STN
LAT 47-027N	DAY 30	NO.DPTH 9	WND-DIR 160	WW-CODE 03	
LDN 60-216W	HR 18.3	W-COLOR	WND-SPD 03	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1007.3	CLD-AMT 7	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
183	0000	179	29612		2120	15098
183	0010	1771	29532		2119	15093
183	0021	1770	29551		2121	15095
183	0030		29598			
183	0040	0290	30796		2457	14571
183	0050	0134	31333		2511	14511
183	0075	0135	32236		2583	14528
183	0101	0138	32472		2601	14537
183	0130	0208	33337		2666	14585

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1790	29612		2120	15098	0000	00000	6592
0010	1771	29532		2119	15093	0066	00003	6610
0020	1783 E	29546		2117	15098	0132	00014	6629
0030	1089 I	29598		2262	14872	0192	00028	5241
0050	0134	31333		2511	14511	0273	00059	2866
0075	0135	32236		2583	14528	0337	00099	2179
0100	0137	3247 C		2601	14536	0390	00146	2007
0125	0195	3323 I		2658	14577	0433	00195	1465

C-REF-NO 003	YR 1966	DEPTH 202	WAVES 1 2522	AIR T 18.5	VIS 4
CONS. NO 015	MONTH 8	MXSAMPD 02	WAVES 2 00X0	WET B 18.0	STN
LAT 47-073N	DAY 30	NO.DPTH 10	WND-DIR 250	WW-CODE 95	
LON 60-130W	HR 19.4	W-COLOR	WND-SPD 03	CLD-TPE 8	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1007.5	CLD-AMT 8	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
194	0000	180	29363		2099	15098
194	0010	1752	29382		2112	15086
194	0021	1737	29502		2125	15084
194	0030	0815	30349		2363	14780
194	0040	0280	30861		2463	14568
194	0050	0189	31389		2511	14537
194	0075	0189	32253		2580	14552
194	0101	0161	32503		2602	14548
194	0150	0221	33531		2680	14596
194	0183	0314	33949		2706	14648

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1800	29363		2099	15098	0000	00000	6797
0010	1752	29382		2112	15086	0067	00003	6677
0020	1763 I	2947 D		2116	15091	0134	00014	6641
0030	0815	30349		2363	14780	0189	00027	4275
0050	0189	31389		2511	14537	0261	00055	2857
0075	0189	32253		2580	14552	0324	00095	2202
0100	0162	3250 B		2602	14548	0377	00142	1998
0125	0175	3299 I		2640	14565	0423	00194	1633
0150	0221	33531		2680	14596	0459	00244	1260
0175	0285	3381 I		2697	14632	0489	00294	1104

C-REF-NO 003	YR 1966	DEPTH 274	WAVES 1 2021	AIR T 20.5	VIS 5
CONS. NO 016	MONTH 8	MXSAMPD 02	WAVES 2 00X0	WET B 18.3	STN
LAT 47-121N	DAY 30	NO.DPTH 12	WND-DIR 200	WW-CODE 01	
LON 60-040W	HR 20.6	W-COLOR	WND-SPD 03	CLD-TPE 6	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1006.8	CLD-AMT 7	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
206	0000	166	29669		2155	15059
206	0010	1608	29928		2186	15048
206	0020	1498	30707		2270	15024
206	0029	1092	30803		2355	14888
206	0039	0350	31766		2529	14610
206	0050	0212	32214		2576	14558
206	0074	0145	32529		2606	14537
206	0099	0116	32694		2621	14530
206	0148	0152	33250		2663	14562
206	0197	0319	33981		2708	14653
206	0222	0377	34199		2719	14685
206	0246	0400	34357		2730	14700

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1660	29669		2155	15059	0000	00000	6263
0010	1608	29928		2186	15048	0061	00003	5965
0020	1498	30707		2270	15024	0117	00011	5169
0030	1011 G	3089 G		2375	14860	0164	00023	4160
0050	0212	32214		2576	14558	0228	00048	2247
0075	0143	32536		2606	14536	0281	00081	1956
0100	0115	32703		2621	14530	0329	00123	1812
0125	0119	3296 B		2642	14539	0372	00173	1620
0150	0158	3328 B		2665	14565	0410	00226	1402
0175	0240 D	3367 H		2690	14611	0442	00280	1174
0200	0327	34011		2709	14657	0470	00332	0992
0225	0379	3423 B		2722	14686	0493	00383	0878

C-REF-NO 003	YR 1966	DEPTH 473	WAVES 1 2422	AIR T 20.2	VIS 4
CONS. NO 017	MONTH 8	MXSAMPD 04	WAVES 2 00X0	WET B 17.7	STN
LAT 47-168N	DAY 30	NO.DPTH 16	WND-DIR 240	WW-CODE 03	
LON 59-550W	HR 21.9	W-COLOR	WND-SPD 09	CLD-TPE 8	
MARSD SQ 150	C/I 1810	W-TRNSP	BARO 1006.2	CLD-AMT 8	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
219	0000	162	30894		2257	15062
219	0010	1599	30886		2261	15057
219	0021	1561	30880		2269	15046
219	0030	0953	31571		2438	14848
219	0040	0558	31936		2521	14700
219	0050	0210	32189		2574	14557
219	0075	0106	32564		2611	14520
219	0099	0088	32821		2632	14519
219	0148	0218	33565		2683	14595
219	0197	0369	34196		2720	14677
219	0221	0387	34312		2727	14690
219	0245	0416	34436		2734	14708
219	0293	0421	34608		2747	14720
219	0341	0419	34732		2757	14729
219	0387	0419	34776		2761	14737
219	0440	0420	34781		2761	14747

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1620	30894		2257	15062	0000	00000	5281
0010	1599	30886		2261	15057	0053	00003	5245
0020	1581 E	3086 D		2264	15052	0105	00011	5227
0030	0953	31571		2438	14848	0149	00022	3565
0050	0210	32189		2574	14557	0208	00044	2265
0075	0106	32564		2611	14520	0261	00077	1912
0100	0089	32835		2634	14520	0306	00118	1696
0125	0142 D	3320 F		2660	14553	0346	00163	1449
0150	0225	33597		2685	14599	0379	00210	1213
0175	0309 D	3395 F		2706	14645	0407	00257	1018
0200	0372	34214		2721	14679	0431	00302	0883
0225	0392	34333		2729	14693	0453	00349	0815
0250	0418	34457		2736	14710	0473	00397	0752
0300	0421	34630		2749	14722	0507	00495	0631
0400	0419	34789		2762	14740	0566	00701	0520



C-REF-NO 003	YR 1966	DEPTH 490	WAVES 1 2523	AIR T 19.5	VIS 3
CONS. NO 018	MONTH 8	MXSAMPD 05	WAVES 2 00X0	WET B 17.5	STN
LAT 47-217N	DAY 30	NO.DPTH 16	WND-DIR 250	WW-CODE 02	
LDN 59-467W	HR 23.3	W-COLOR	WND-SPD 09	CLD-TPE 8	
MARSD SQ 150	C/I 1810	W-TRNSP	BARO 1006.1	CLD-AMT 8	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
233	0000	159	30847		2260	15052
233	0010	1561	30828		2265	15044
233	0020	1364	31208		2336	14986
233	0029	0707	31811		2492	14756
233	0039	0316	32086		2557	14600
233	0049	0154	32279		2585	14533
233	0072	0103	32606		2614	14518
233	0097	0084	32898		2639	14518
233	0145	0224	33614		2687	14598
233	0194	0381	34235		2722	14682
233	0217	0409	34368		2730	14700
233	0242	0419	34463		2736	14709
233	0290	0419	34619		2748	14719
233	0339	0419	34713		2756	14729
233	0386	0420	34766		2760	14737
233	0460		34779			

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1590	30847		2260	15052	0000	00000	5252
0010	1561	30828		2265	15044	0052	00003	5207
0020	1364	31208		2336	14986	0101	00010	4538
0030	0655	3185 B		2502	14736	0139	00019	2949
0050	0147 B	32295		2587	14530	0190	00039	2142
0075	0098	32641		2617	14517	0240	00071	1849
0100	0089	32941		2642	14521	0284	00110	1615
0125	0151 E	3331 D		2668	14558	0322	00153	1375
0150	0243	3369 B		2691	14608	0354	00198	1157
0175	0327 C	3403 E		2711	14653	0381	00242	0977
0200	0391	34277		2724	14688	0404	00286	0854
0225	0414	34402		2732	14703	0424	00331	0787
0250	0420	34492		2738	14711	0443	00378	0728
0300	0419	34642		2750	14721	0477	00473	0619
0400		34775						

C-REF-NO 003	YR 1966	DEPTH 490	WAVES 1 2822	AIR T 18.5	VIS 3
CONS. NO 019	MONTH 8	MXSAMPD 05	WAVES 2 00X0	WET B 17.0	STN
LAT 47-269N	DAY 31	NO.DPTH 15	WND-DIR 280	WW-CODE 01	
LON 59-380W	HR 00.8	W-COLOR	WND-SPD 09	CLD-TPE X	
MARSD SQ 150	C/I 1810	W-TRNSP	BARO 1006.3	CLD-AMT 9	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
008	0000	144	31498		2343	15012
008	0010	1390	31547		2357	14997
008	0020	0574	32014		2525	14704
008	0030	0194	32138		2571	14546
008	0040	0150	32215		2580	14529
008	0050	0161	32400		2594	14538
008	0074	0096	32875		2636	14519
010	0150	0225	33572		2683	14599
010	0200	0336	34055		2712	14662
010	0225	0390	34260		2723	14691
010	0250	0416	34421		2733	14709
010	0301	0418	34576		2745	14720
010	0351	0418	34677		2753	14730
010	0402	0420	34741		2758	14740
010	0480	0421	34783		2761	14754

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1440	31498		2343	15012	0000	00000	4468
0010	1390	31547		2357	14997	0044	00002	4336
0020	0574	32014		2525	14704	0080	00007	2730
0030	0194	32138		2571	14546	0105	00014	2292
0050	0161	32400		2594	14538	0149	00031	2071
0075	0096	32888		2637	14520	0196	00061	1660
0100	0109 I	3318 I		2660	14534	0235	00096	1446
*0125	0152 I	3341 I		2675	14560	0270	00135	1301
0150	0225	33572		2683	14599	0302	00180	1232
0175	0279	3382 B		2698	14630	0331	00229	1092
0200	0336	34055		2712	14662	0357	00279	0967
0225	0390	34260		2723	14691	0380	00329	0868
0250	0416	34421		2733	14709	0401	00379	0777
0300	0418	34574		2745	14720	0437	00482	0670
0400	0420	34739		2758	14739	0499	00702	0558

C-REF-NO 003	YR 1966	DEPTH 460	WAVES 1 4922	AIR T 19.8	VIS 5
CONS. NO 020	MONTH 8	MXSAMPD 04	WAVES 2 00X0	WET B 16.5	STN
LAT 47-315N	DAY 31	NO.DPTH 16	WND-DIR 320	WW-CODE 00	
LON 59-290W	HR 02.6	W-COLOR	WND-SPD 11	CLD-TPE X	
MARSD SQ 150	C/I 1810	W-TRNSP	BARO 1006.0	CLD-AMT 6	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
026	0000	115	31497		2399	14913
026	0010	0967	31832		2456	14853
026	0020	0456	32320		2562	14659
026	0030	0266	32404		2587	14581
026	0040	0169	32484		2600	14541
026	0050	0141	32540		2607	14531
026	0074	0092	32899		2639	14518
026	0098	0121				
026	0146	0110	33117		2655	14541
026	0194	0297	33844		2699	14641
026	0216	0389	34184		2717	14688
026	0240	0428	34343		2726	14711
026	0285	0429	34562		2743	14722
026	0330	0425				
026	0373	0426	34711		2755	14737
026	0403	0427	34757		2759	14743

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1150	31497		2399	14913	0000	00000	3933
0010	0967	31832		2456	14853	0037	00002	3390
0020	0456	32320		2562	14659	0066	00006	2375
0030	0266	32404		2587	14581	0089	00012	2143
0050	0141	32540		2607	14531	0130	00028	1952
0075	0093	3290 B		2639	14518	0175	00057	1647
0100	0119	3299 I		2644	14536	0216	00094	1596
0125	0108 F	3307 I		2651	14536	0255	00139	1532
0150	0121	3317 B		2658	14547	0293	00192	1463
0175	0210 D	3353 F		2681	14596	0327	00249	1255
0200	0325	3395 B		2704	14655	0356	00304	1039
0225	0409	3426 C		2721	14699	0380	00357	0889
0250	0433 B	34400		2730	14715	0402	00409	0810
0300	0428	3460 C		2746	14724	0439	00513	0660
0400	0427	34756		2759	14742	0500	00730	0553

C-REF-NO 003	YR 1966	DEPTH 106	WAVES 1 4921	AIR T 17.6	VIS 6
CONS. NO 021	MONTH 8	MXSAMPD 01	WAVES 2 00X0	WET B 15.6	STN
LAT 47-366N	DAY 31	NO.DPTH 7	WND-DIR 290	WW-CODE 10	
LON 59-196W	HR 04.1	W-COLOR	WND-SPD 07	CLD-TPE X	
MARSD SQ 150	C/I 1810	W-TRNSP	BARO 1006.5	CLD-AMT 8	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
041	0000	124	31626		2392	14946
041	0010	1096	31700		2424	14898
041	0020	0528	32265		2550	14689
041	0030	0394	32380		2573	14636
041	0040	0307	32452		2587	14601
041	0050	0284	32468		2590	14593
041	0075	0157	32671		2616	14544

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1240	31626		2392	14946	0000	00000	3996
0010	1096	31700		2424	14898	0039	00002	3694
0020	0528	32265		2550	14688	0070	00006	2491
0030	0394	32380		2573	14636	0094	00012	2271
0050	0284	32468		2590	14593	0138	00030	2110
0075	0157	32671		2616	14544	0188	00062	1863



C-REF-NO 003	YR 1966	DEPTH 457	WAVES 1 4921	AIR T 15.8	VIS 7
CONS. NO 022	MONTH 8	MXSAMPD 04	WAVES 2 00X0	WET B 14.6	STN
LAT 47-314N	DAY 31	NO.DPTH 16	WND-DIR 340	WW-CODE 02	
LON 59-285W	HR 05.5	W-COLOR	WND-SPD 06	CLD-TPE X	
MARSD SQ 150	C/I 1810	W-TRNSP	BARO 1007.3	CLD-AMT 8	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
055	0000	126	31654		2390	14953
055	0010	1160	31672		2410	14920
055	0020	0744	32094		2510	14773
055	0030	0311	32405		2583	14601
055	0040	0223	32477		2596	14565
055	0050	0153	32515		2604	14536
055	0075	0102	32629		2616	14519
055	0099	0088	32811		2632	14519
058	0149	0242	33603		2684	14606
058	0199	0387	34174		2716	14685
058	0223	0432	34380		2728	14710
058	0247	0435	34489		2736	14717
058	0297	0425	34637		2749	14723
058	0345	0426	34722		2756	14733
058	0394	0429	34727		2756	14742
058	0428	0428	34751		2758	14747

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1260	31654		2390	14953	0000	00000	4011
0010	1160	31672		2410	14920	0039	00002	3823
0020	0744	32094		2510	14773	0073	00007	2878
0030	0311	32405		2583	14601	0098	00013	2179
0050	0153	32515		2604	14536	0140	00030	1979
0075	0102	32629		2616	14519	0189	00061	1861
0100	0090	32825		2633	14520	0234	00101	1704
0125	0153 E	3320 I		2659	14558	0273	00147	1459
0150	0245	33616		2685	14608	0307	00194	1215
0175	0322 B	33926		2703	14650	0336	00241	1050
0200	0389	34184		2717	14686	0360	00289	0923
0225	0433	34391		2729	14711	0382	00336	0815
0250	0435	34500		2737	14717	0402	00384	0737
0300	0425	34644		2750	14724	0436	00480	0624
0400	0428	3475 C		2758	14743	0496	00694	0563

C-REF-NO 003	YR 1966	DEPTH 495	WAVES 1 4921	AIR T 15.8	VIS 7
CONS. NO 023	MONTH 8	MXSAMPD 05	WAVES 2 00X0	WET B 15.0	STN
LAT 47-267N	DAY 31	NO.DPTH 16	WND-DIR 320	WW-CODE 02	
LON 59-375W	HR 07.2	W-COLOR	WND-SPD 07	CLD-TPE X	
MARSD SQ 150	C/I 1810	W-TRNSP	BARO 1007.8	CLD-AMT 8	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
072	0000	141	31544		2352	15002
072	0010	1374	31537		2359	14992
072	0021	0306	32063		2556	14592
072	0030	0237	32217		2574	14566
072	0040	0164	32319		2587	14537
072	0050	0152	32427		2597	14534
072	0075	0111	32649		2617	14523
072	0100	0093	32888		2638	14522
075	0150	0230	33577		2683	14601
075	0201	0380	34189		2718	14682
075	0225	0408	34353		2729	14700
075	0250	0423	34476		2737	14712
075	0301	0422	34613		2748	14722
075	0350	0419	34700		2755	14730
075	0400	0420	34759		2760	14740
075	0477	0421	34772		2760	14753

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1410	31544		2352	15002	0000	00000	4375
0010	1374	31537		2359	14992	0044	00002	4313
0020	0403 I	3201 D		2543	14633	0078	00007	2556
0030	0237	32217		2574	14566	0102	00013	2263
0050	0152	32427		2597	14534	0146	00031	2045
0075	0111	32649		2617	14523	0195	00062	1851
0100	0093	32888		2638	14522	0239	00101	1658
0125	0146 E	3322 E		2661	14555	0278	00146	1440
0150	0230	33577		2683	14601	0312	00193	1232
0175	0311 C	3391 D		2702	14645	0340	00241	1055
0200	0378	34179		2718	14681	0365	00288	0914
0225	0408	34353		2729	14700	0387	00336	0817
0250	0423	34476		2737	14712	0407	00384	0743
0300	0422	34611		2748	14722	0442	00482	0646
0400	0420	34759		2760	14740	0502	00695	0543

C-REF-NO 003	YR 1966	DEPTH 493	WAVES 1 2721	AIR T 18.1	VIS 7
CONS. NO 024	MONTH 8	MXSAMPD 05	WAVES 2 00X0	WET B 16.8	STN
LAT 47-218N	DAY 31	NO.DPTH 16	WND-DIR 270	WW-CODE 03	
LON 59-462W	HR 08.9	W-COLOR	WND-SPD 07	CLD-TPE 1	
MARSD SQ 150	C/I 1810	W-TRNSP	BARO 1007.6	CLD-AMT 4	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
089	0000	152	30966		2285	15031
089	0010	1507	31010		2291	15029
089	0020	1199	31418		2384	14933
089	0030	0564	31965		2522	14701
089	0040	0236	32127		2567	14566
089	0050	0152	32302		2587	14533
089	0074	0094	32615		2616	14515
089	0099	0040	32890		2641	14498
089	0148	0246	33720		2693	14610
089	0198	0379	34237		2722	14682
089	0223	0402	34380		2731	14698
089	0247	0427	34480		2737	14714
089	0297	0421	34618		2748	14721
089	0346	0420	34712		2756	14730
089	0395	0419	34780		2761	14739
089	0470	0420	34775		2761	14751

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1520	30966		2285	15031	0000	00000	5019
0010	1507	31010		2291	15029	0050	00003	4963
0020	1199	31418		2384	14933	0095	00009	4080
0030	0564	31965		2522	14701	0130	00018	2757
0050	0152	32302		2587	14533	0179	00037	2140
0075	0091	32626		2617	14514	0229	00069	1857
0100	0043	32907		2642	14500	0273	00108	1616
0125	0128 I	3333 I		2671	14548	0310	00151	1347
0150	0253	33747		2695	14613	0342	00194	1123
0175	0330	34039		2711	14655	0368	00238	0972
0200	0381	34251		2723	14683	0391	00282	0864
0225	0404	34389		2732	14699	0412	00328	0786
0250	0428	34490		2737	14714	0431	00374	0738
0300	0421	34625		2749	14722	0466	00471	0635
0400	0419	3478 B		2761	14740	0525	00680	0529

C-REF-NO 003	YR 1966	DEPTH 470	WAVES 1 3021	AIR T 16.6	VIS 7
CONS. NO 025	MONTH 8	MXSAMPD 05	WAVES 2 00X0	WET B 15.8	STN
LAT 47-171N	DAY 31	NO.DPTH 16	WND-DIR 300	WW-CODE 03	
LON 59-555W	HR 10.4	W-COLOR	WND-SPD 06	CLD-TPE 1	
MARSD SQ 150	C/I 1810	W-TRNSP	BARO 1008.0	CLD-AMT 4	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
104	0000	158	30885		2266	15049
104	0010	1582	30872		2264	15051
104	0020	1580	30801		2259	15051
104	0030	1026	31497		2420	14874
104	0040	0463	31920		2530	14660
104	0050	0286	32161		2566	14590
104	0075	0131	32448		2600	14529
104	0099	0079	32819		2633	14515
104	0149	0236	33660		2689	14605
104	0199	0381	34261		2724	14683
104	0224	0391	34333		2729	14693
104	0248	0415	34432		2734	14708
104	0298	0421	34611		2748	14721
104	0347	0420	34718		2756	14730
104	0397	0420	34773		2761	14739
104	0452	0420	34785		2762	14749

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1580	30885		2266	15049	0000	00000	5203
0010	1582	30872		2264	15051	0052	00003	5219
0020	1580	30801		2259	15051	0105	00011	5269
0030	1026	31497		2420	14873	0150	00022	3734
0050	0286	32161		2566	14590	0211	00046	2343
0075	0131	32448		2600	14529	0266	00080	2016
0100	0080	32837		2634	14516	0313	00121	1690
0125	0139 H	3327 E		2665	14552	0352	00166	1401
0150	0240	33676		2690	14607	0384	00211	1165
0175	0323 C	3403 E		2711	14651	0411	00256	0975
0200	0382	34265		2724	14684	0434	00300	0854
0225	0392	34337		2729	14693	0455	00346	0813
0250	0416	34440		2735	14709	0475	00394	0762
0300	0421	34617		2748	14722	0510	00493	0641
0400	0420	34777		2761	14740	0569	00703	0529



C-REF-NO 003	YR 1966	DEPTH 267	WAVES 1 3222	AIR T 17.3	VIS 7
CONS. NO 026	MONTH 8	MXSAMPD 02	WAVES 2 00X0	WET B 15.1	STN
LAT 47-123N	DAY 31	NO.DPTH 12	WND-DIR 330	WW-CODE 02	
LON 60-043W	HR 11.7	W-COLOR	WND-SPD 06	CLD-TPE 5	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1010.3	CLD-AMT 2	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
117	0000	157	29784		2183	15033
117	0010	1583	29854		2186	15039
117	0020	1587	30257		2216	15047
117	0030	0855	30926		2402	14802
117	0040	0280	31761		2534	14580
117	0050	0212	32121		2568	14557
117	0075	0141	32537		2606	14535
117	0100	0101	32795		2630	14525
117	0149	0201	33464		2676	14587
117	0199	0348	34109		2715	14667
117	0224	0395	34326		2728	14694
117	0249	0406	34404		2733	14704

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1570	29784		2183	15033	0000	00000	5989
0010	1583	29854		2186	15039	0060	00003	5967
0020	1587	30257		2216	15047	0118	00012	5682
0030	0855	30926		2402	14802	0166	00024	3901
0050	0212	32121		2568	14557	0229	00048	2318
0075	0141	32537		2606	14535	0283	00082	1955
0100	0101	32795		2630	14525	0329	00123	1734
0125	0135 D	3313 D		2654	14548	0370	00169	1504
0150	0204	33478		2677	14588	0405	00219	1286
0175	0279 C	3382 C		2698	14630	0435	00268	1091
0200	0350	34120		2716	14669	0461	00317	0932
0225	0393	3432 C		2727	14693	0483	00365	0827
0250	0406	34406		2733	14704	0503	00415	0778

C-REF-NO 003	YR 1966	DEPTH 201	WAVES 1 3221	AIR T 17.8	VIS 7
CONS. NO 027	MONTH 8	MXSAMPD 02	WAVES 2 00X0	WET B 15.3	STN
LAT 47-073N	DAY 31	NO.DPTH 10	WND-DIR 330	WW-CODE 02	
LON 60-131W	HR 12.9	W-COLOR	WND-SPD 07	CLD-TPE 5	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1010.2	CLD-AMT 2	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
129	0000	171	29603		2138	15074
129	0010	1696	29570		2139	15071
129	0020	1609	29457		2150	15044
129	0030	0486	30642		2427	14651
129	0040	0231	31131		2488	14550
129	0050	0175	31303		2506	14529
129	0075	0175	32218		2579	14546
129	0100	0134	32640		2615	14537
130	0150	0192	33380		2670	14582
130	0182	0330	33991		2707	14655

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1710	29603		2138	15074	0000	00000	6420
0010	1696	29570		2139	15071	0064	00003	6416
0020	1609	29457		2150	15044	0128	00013	6315
0030	0486	30642		2427	14651	0178	00025	3668
0050	0175	31303		2506	14529	0244	00051	2914
0075	0175	32218		2579	14546	0309	00092	2219
0100	0134	32640		2615	14537	0360	00137	1872
0125	0139	3300 F		2644	14549	0404	00187	1601
0150	0192	33380		2670	14582	0441	00239	1352
0175	0293	3387 C		2701	14637	0472	00290	1070

C-REF-NO 003	YR 1966	DEPTH 144	WAVES 1 3222	AIR T 16.5	VIS 7
CONS. NO 028	MONTH 8	MXSAMPD 01	WAVES 2 00X0	WET B 13.8	STN
LAT 47-027N	DAY 31	NO.DPTH 9	WND-DIR 310	WW-CODE 02	
LON 60-220W	HR 14.2	W-COLOR	WND-SPD 10	CLD-TPE 5	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1011.8	CLD-AMT 2	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
142	0000	175	29500		2121	15085
142	0010	1747	29483		2121	15085
142	0021	1750	29528		2123	15089
142	0030	1762	29603		2126	15094
142	0040	0960	30316		2339	14836
142	0050	0415	30793		2446	14627
142	0075	0133	32192		2579	14527
142	0101	0142	32696		2619	14542
142	0130	0191	33349		2668	14577

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1750	29500		2121	15085	0000	00000	6584
0010	1747	29483		2121	15085	0066	00003	6592
0020	1749	29521		2123	15088	0132	00013	6572
0030	1762	29603		2126	15094	0198	00030	6544
0050	0415	30793		2446	14627	0298	00068	3488
0075	0133	32192		2579	14527	0370	00112	2212
0100	0138	3269 B		2618	14540	0421	00157	1841
0125	0160 D	3331 I		2667	14562	0462	00203	1384

C-REF-NO	003	YR	1966	DEPTH	204	WAVES	1 3222	AIR T	18.0	VIS	8
CONS. NO	029	MONTH	8	MXSAMPD	02	WAVES	2 00X0	WET B	14.4	STN	
LAT	47-073N	DAY	31	NO.DPTH	10	WND-DIR	320	WW-CODE	01		
LON	60-130W	HR	15.7	W-COLOR		WND-SPD	11	CLD-TPE	2		
MARSD SQ	151	C/I	1810	W-TRNSP		BARO	1012.2	CLD-AMT	1	HW	

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
157	0000	165	29501		2144	15054
157	0010	1638	29452		2143	15052
157	0020	1627	29444		2145	15050
157	0030	0654	30536		2399	14719
157	0040	0290	30862		2462	14572
157	0050	0152	31112		2492	14516
157	0074	0168	32189		2577	14542
157	0100	0137	32620		2613	14538
157	0149	0158	33308		2667	14565
157	0181	0319	33974		2707	14650

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1650	29501		2144	15054	0000	00000	6365
0010	1638	29452		2143	15052	0064	00003	6377
0020	1627	29444		2145	15050	0128	00013	6362
0030	0654	30536		2399	14719	0179	00026	3931
0050	0152	31112		2492	14516	0249	00053	3045
0075	0167	3221 B		2579	14542	0316	00094	2217
0100	0137	32620		2613	14538	0367	00140	1889
0125	0124 D	3296 H		2641	14541	0412	00191	1626
0150	0181 F	3339 I		2672	14577	0449	00243	1336
0175	0286 B	3386 D		2701	14633	0479	00293	1069



C-REF-NO 003	YR 1966	DEPTH 267	WAVES 1 3322	AIR T 16.7	VIS 8
CONS. NO 030	MONTH 8	MXSAMPD 02	WAVES 2 00X0	WET B 13.5	STN
LAT 47-122N	DAY 31	NO.DPTH 12	WND-DIR 330	WW-CODE 02	
LON 60-044W	HR 17.1	W-COLOR	WND-SPD 09	CLD-TPE 2	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1012.0	CLD-AMT 1	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
171	0000	168	29670		2150	15066
171	0010	1672	29658		2151	15065
171	0020	1630	29802		2172	15055
171	0030	0970	30430		2346	14839
171	0040	0315	31465		2508	14591
171	0050	0269	31860		2543	14578
171	0075	0191	32396		2592	14555
171	0100	0140	32582		2610	14539
171	0150	0156	33245		2662	14564
171	0200	0343	34043		2710	14664
171	0224	0387	34253		2723	14690
171	0249	0390	34300		2726	14696

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1680	29670		2150	15066	0000	00000	6306
0010	1672	29658		2151	15065	0063	00003	6300
0020	1630	29802		2172	15055	0125	00013	6107
0030	0970	30430		2346	14839	0178	00026	4438
0050	0269	31860		2543	14578	0249	00053	2558
0075	0191	32396		2592	14555	0307	00089	2095
0100	0140	32582		2610	14539	0358	00134	1920
0125	0127	3288 D		2635	14542	0403	00186	1685
0150	0156	33245		2662	14564	0442	00241	1428
0175	0247 F	3367 I		2689	14614	0475	00296	1130
0200	0343	34043		2710	14664	0502	00348	0983
0225	0386	3425 B		2723	14689	0526	00398	0873
0250	0389	34299		2726	14696	0547	00451	0840

C-REF-NO 003	YR 1966	DEPTH 473	WAVES 1 3122	AIR T 18.5	VIS 8
CONS. NO 031	MONTH 8	MXSAMPD 04	WAVES 2 00X0	WET B 14.5	STN
LAT 47-169N	DAY 31	NO.DPTH 16	WND-DIR 310	WW-CODE 02	
LON 59-554W	HR 18.6	W-COLOR	WND-SPD 09	CLD-TPE 2	
MARSD SQ 150	C/I 1810	W-TRNSP	BARO 1012.3	CLD-AMT 1	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
186	0000	160	30863		2260	15055
186	0010	1589	30793		2257	15052
186	0020	1585	30797		2258	15053
186	0030	1044	31458		2414	14880
186	0040	0487	31925		2528	14670
186	0050	0212	32140		2570	14557
186	0075	0189	32518		2602	14556
186	0100	0096	32676		2620	14521
186	0149	0192	33450		2676	14582
186	0198	0350	34078		2713	14668
186	0222	0380	34250		2723	14687
186	0246	0393	34333		2729	14697
186	0295	0422	34592		2746	14721
186	0344	0421	34726		2757	14730
186	0392	0418	34773		2761	14738
186	0446	0421	34784		2761	14748

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1600	30863		2260	15055	0000	00000	5261
0010	1589	30793		2257	15052	0053	00003	5292
0020	1585	30797		2258	15053	0106	00011	5283
0030	1044	31458		2414	14880	0152	00022	3791
0050	0212	32140		2570	14557	0213	00046	2303
0075	0189	32518		2602	14556	0267	00080	2001
0100	0096	32676		2620	14521	0315	00123	1821
0125	0118 F	3304 I		2648	14540	0358	00171	1557
0150	0196	33465		2677	14584	0394	00221	1290
0175	0280 D	3382 C		2698	14630	0424	00271	1095
0200	0353	34096		2714	14670	0449	00321	0953
0225	0382	34262		2724	14688	0472	00370	0859
0250	0396	34354		2730	14699	0493	00422	0806
0300	0423	34611		2747	14722	0530	00524	0647
0400	0419	3479 B		2762	14740	0589	00733	0522

C-REF-NO 003	YR 1966	DEPTH 493	WAVES 1 3222	AIR T 17.0	VIS 8
CONS. NO 032	MONTH 8	MXSAMPD 05	WAVES 2 00X0	WET B 13.2	STN
LAT 47-219N	DAY 31	NO.DPTH 16	WND-DIR 320	WW-CODE 02	
LON 59-466W	HR 20.0	W-COLOR	WND-SPD 08	CLD-TPE 2	
MARSD SQ 150	C/I 1810	W-TRNSP	BARO 1011.8	CLD-AMT 1	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
200	0000	158	30862		2264	15049
200	0009	1575	30838		2263	15048
200	0019	1518	30862		2277	15032
200	0027	0654	32038		2517	14738
200	0037	0276	32256		2574	14584
200	0046	0163	32348		2590	14537
200	0069	0056	32553		2613	14496
200	0094	-0015	32722		2630	14470
200	0140	0172	33383		2672	14571
200	0183	0335	34046		2711	14659
200	0212	0389	34273		2724	14689
200	0237	0412	34427		2734	14705
200	0284	0423	34588		2746	14719
200	0333	0419	34695		2755	14727
200	0381	0420	34776		2761	14737
200	0454	0420	34783		2761	14749

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1580	30862		2264	15049	0000	00000	5220
0010	1596 H	3080 H		2256	15055	0053	00003	5299
0020	1416 I	3101 I		2310	15001	0103	00010	4788
0030	0486 I	3218 I		2548	14672	0140	00019	2509
0050	0134 C	32387		2595	14525	0186	00038	2064
0075	0031	3259 B		2617	14486	0235	00069	1852
0100	-0001 D	3280 C		2635	14478	0280	00108	1678
0125	0090 H	3314 F		2658	14529	0319	00154	1462
0150	0210	3353 B		2681	14592	0354	00201	1250
0175	0296	3388 C		2702	14638	0383	00250	1059
0200	0365	34169		2718	14675	0407	00297	0910
0225	0404	34361		2730	14699	0429	00344	0807
0250	0418	3448 B		2738	14710	0448	00391	0733
0300	0422	34628		2749	14722	0483	00488	0634
0400	0419	3478 B		2761	14739	0541	00696	0525

C-REF-NO 003	YR 1966	DEPTH 491	WAVES 1 3222	AIR T 16.7	VIS 8
CONS. NO 033	MONTH 8	MXSAMPD 05	WAVES 2 00X0	WET B 13.2	STN
LAT 47-267N	DAY 31	NO.DPTH 16	WND-DIR 320	WW-CODE 02	
LON 59-379W	HR 21.5	W-COLOR	WND-SPD 05	CLD-TPE 2	
MARSD SQ 150	C/I 1810	W-TRNSP	BARO 1012.0	CLD-AMT 1	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
215	0000	135	31501		2361	14982
215	0010	1324	31520		2368	14975
215	0020	0821	31865		2481	14800
215	0029	0252	32069		2561	14570
215	0039	0199	32238		2579	14551
215	0050	0205	32408		2592	14558
215	0074	0120	32632		2615	14527
215	0098	0096	32842		2634	14523
215	0148	0212	33528		2681	14592
215	0197	0351	34113		2715	14668
215	0222	0403	34335		2728	14697
215	0246	0424	34498		2738	14712
215	0296	0419	34622		2749	14720
215	0345	0420	34718		2756	14730
215	0394	0421	34768		2760	14739
215	0469	0421	34782		2761	14752

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1350	31501		2361	14982	0000	00000	4291
0010	1324	31520		2368	14975	0043	00002	4230
0020	0821	31865		2481	14800	0080	00008	3153
0030	0232 D	32088		2564	14562	0108	00014	2357
0050	0205	32408		2592	14558	0152	00033	2095
0075	0118	32640		2616	14526	0202	00064	1862
0100	0098	32867		2636	14524	0247	00104	1677
0125	0143 D	3320 F		2659	14553	0286	00149	1455
0150	0218	33555		2682	14595	0320	00197	1240
0175	0290 B	3387 B		2701	14635	0349	00245	1064
0200	0358	34142		2717	14672	0374	00293	0923
0225	0407	34359		2729	14700	0396	00340	0812
0250	0425	34514		2740	14714	0415	00387	0717
0300	0419	34631		2749	14721	0449	00482	0628
0400	0421	34775		2761	14740	0508	00690	0532



C-REF-NO 003	YR 1966	DEPTH 453	WAVES 1 3122	AIR T 15.5	VIS 8
CONS. NO 034	MONTH 8	MXSAMPD 04	WAVES 2 00X0	WET B 12.4	STN
LAT 47-309N	DAY 31	NO.DPTH 16	WND-DIR 310	WW-CODE 02	
LON 59-281W	HR 23.0	W-COLOR	WND-SPD 05	CLD-TPE 2	
MARSD SQ 150	C/I 1810	W-TRNSP	BARO 1011.8	CLD-AMT 1	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
230	0000	131	31544		2372	14969
230	0010	1193	31627		2401	14932
230	0020	0393	32366		2572	14633
230	0029	0259	32444		2590	14578
230	0039	0190	32511		2601	14551
230	0049	0132	32555		2608	14527
230	0073	0107	32704		2622	14522
230	0097	0093	32931		2641	14523
230	0147	0224	33570		2683	14598
230	0197	0365	34111		2714	14674
230	0221	0439	34406		2729	14713
230	0246	0434	34506		2738	14717
230	0296	0424	34651		2751	14723
230	0344	0426	34729		2756	14732
230	0394	0427	34755		2758	14741
230	0429	0426	34754		2758	14747

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1310	31544		2372	14969	0000	00000	4184
0010	1193	31627		2401	14931	0041	00002	3913
0020	0393	32366		2572	14633	0072	00006	2280
0030	0250	32452		2592	14575	0094	00012	2095
0050	0129	32560		2609	14526	0134	00028	1930
0075	0105	32720		2623	14521	0181	00058	1793
0100	0098	32968		2644	14526	0224	00096	1601
0125	0152 D	3328 E		2665	14559	0262	00140	1398
0150	0232	33602		2685	14602	0295	00186	1215
0175	0301	3387 C		2701	14640	0323	00234	1071
0200	0376	3415 B		2716	14680	0349	00282	0933
0225	0441	3443 B		2731	14715	0370	00329	0795
0250	0433	34520		2739	14717	0390	00376	0721
0300	0424	34660		2751	14723	0423	00470	0612
0400	0427	34759		2759	14742	0482	00680	0551

C-REF-NO 003	YR 1966	DEPTH 95	WAVES 1 0422	AIR T 15.1	VIS 3
CONS. NO 035	MONTH 9	MXSAMPD 01	WAVES 2 00X0	WET B 12.6	STN
LAT 47-365N	DAY 01	NO.DPTH 7	WND-DIR 040	WW-CODE 02	
LON 59-197W	HR 00.2	W-COLOR	WND-SPD 03	CLD-TPE X	
MARSD SQ 150	C/I 1810	W-TRNSP	BARO 1012.2	CLD-AMT 2	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
002	0000	095	31879		2462	14845
002	0010	0664	32110		2521	14740
002	0020	0210	32592		2606	14557
002	0029	0163	32737		2621	14540
002	0039	0153	32766		2624	14538
002	0050	0139	32820		2629	14534
002	0074	0126	32935		2639	14534

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	0950	31879		2462	14845	0000	00000	3327
0010	0664	32110		2521	14740	0031	00001	2763
0020	0210	32592		2606	14557	0054	00005	1959
0030	0161	32743		2622	14539	0073	00010	1811
0050	0139	32820		2629	14534	0109	00024	1738
0075	0126	32941		2640	14534	0152	00051	1638

C-REF-NO 003	YR 1966	DEPTH 473	WAVES 1 2722	AIR T 15.3	VIS 3
CONS. NO 036	MONTH 9	MXSAMPD 04	WAVES 2 00X0	WET B 12.8	STN
LAT 47-319N	DAY 01	NO.DPTH 15	WND-DIR 270	WW-CODE 02	
LON 59-295W	HR 01.8	W-COLOR	WND-SPD 04	CLD-TPE X	
MARSD SQ 150	C/I 1810	W-TRNSP	BARO 1012.3	CLD-AMT 9	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
018	0000	130	31564		2376	14966
018	0010	1272	31568		2381	14958
018	0020	0416	32336		2568	14643
018	0029	0239	32448		2592	14570
018	0039	0180	32526		2603	14546
018	0049	0147	32569		2609	14534
018	0073	0104	32707		2622	14520
018	0097	0089	32886		2638	14520
018	0145	0218	33556		2682	14595
018	0192	0417	34274		2721	14698
018	0215	0435	34526		2739	14712
018	0283	0437	34534		2740	14724
018	0327	0425	34674		2752	14729
018	0371	0429	34740		2757	14738
018	0401	0429	34739		2757	14743

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1300	31564		2376	14966	0000	00000	4151
0010	1272	31568		2381	14958	0041	00002	4098
0020	0416	32336		2568	14643	0074	00007	2324
0030	0229	32458		2594	14566	0096	00012	2075
0050	0144	32574		2609	14533	0136	00029	1929
0075	0101	32719		2624	14520	0183	00058	1792
0100	0093	3292 B		2640	14523	0226	00097	1633
0125	0147 C	3325 E		2663	14556	0265	00141	1419
0150	0243 B	3364 B		2687	14607	0298	00187	1197
0175	0353 F	3403 D		2708	14664	0325	00233	1003
0200	0427	34373		2728	14704	0348	00277	0820
0225	0438	3455 I		2741	14716	0367	00319	0699
0250	0442	3458 I		2743	14722	0385	00361	0684
0300	0432	3459 B		2744	14726	0419	00458	0676
0400	0429	34740		2757	14743	0482	00681	0568

C-REF-NO 003	YR 1966	DEPTH 497	WAVES 1 49X1	AIR T 15.2	VIS 8
CONS. NO 037	MONTH 9	MXSAMPD 05	WAVES 2 00X0	WET B 12.2	STN
LAT 47-266N	DAY 01	NO.DPTH 16	WND-DIR 310	WW-CODE 01	
LON 59-374W	HR 03.4	W-COLOR	WND-SPD 07	CLD-TPE	
MARSD SQ 150	C/I 1810	W-TRNSP	BARO 1012.0	CLD-AMT 0	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
034	0000	138	31548		2359	14993
034	0010	1384	31543		2357	14995
034	0020	0305	32064		2556	14592
034	0030	0189	32175		2574	14544
034	0040	0171	32316		2587	14540
034	0050	0143	32457		2600	14531
034	0075	0082	32694		2623	14511
034	0099	0110	32949		2641	14531
034	0150	0233	33626		2687	14603
034	0200	0396	34235		2720	14689
034	0224	0420	34405		2731	14706
034	0249	0422	34473		2737	14712
034	0299	0420	34593		2746	14721
034	0348	0420	34691		2754	14730
034	0399	0421	34756		2759	14740
034	0475	0422	34770		2760	14753

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1380	31548		2359	14993	0000	00000	4314
0010	1384	31543		2357	14995	0043	00002	4328
0020	0305	32064		2556	14592	0077	00007	2431
0030	0189	32175		2574	14544	0101	00013	2261
0050	0143	32457		2600	14531	0144	00030	2017
0075	0082	32694		2623	14511	0192	00061	1800
0100	0112	32962		2642	14532	0235	00099	1614
0125	0165	3329 C		2665	14564	0273	00143	1403
0150	0233	33626		2687	14603	0306	00188	1198
0175	0321 D	3396 D		2705	14650	0334	00235	1027
0200	0396	34235		2720	14689	0358	00281	0891
0225	0420	34409		2732	14706	0379	00327	0788
0250	0422	34476		2737	14712	0398	00374	0742
0300	0420	34595		2747	14721	0434	00473	0656
0400	0421	34755		2759	14740	0494	00689	0547

C-REF-ND 003	YR 1966	DEPTH 501	WAVES 1 49X1	AIR T 15.3	VIS 8
CONS. NO 038	MONTH 9	MXSAMPD 05	WAVES 2 00X0	WET B 12.8	STN
LAT 47-218N	DAY 01	NO.DPTH 16	WND-DIR 230	WW-CODE 02	
LON 59-460W	HR 04.9	W-COLOR	WND-SPD 04	CLD-TPE	
MARSD SQ 150	C/I 1810	W-TRNSP	BARO 1010.7	CLD-AMT 0	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
049	0000	143	31184		2320	15005
049	0010	1413	31336		2336	15002
049	0020	1029	31668		2433	14875
049	0029	0352	32204		2563	14615
049	0039	0114	32268		2587	14513
049	0049	0118	32379		2595	14518
049	0074	-0006	32548		2615	14468
049	0098	-0018	32775		2634	14470
049	0148	0226	33636		2688	14600
049	0198	0389	34254		2723	14686
049	0222	0411	34400		2732	14702
049	0247	0420	34492		2738	14711
049	0297	0424	34632		2749	14723
049	0346	0421	34716		2756	14731
049	0396	0421	34763		2760	14739
049	0472	0421	34783		2761	14752

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1430	31184		2320	15005	0000	00000	4679
0010	1413	31336		2336	15002	0046	00002	4536
0020	1029	31668		2433	14875	0087	00008	3610
0030	0311 B	3222 C		2568	14598	0117	00016	2317
0050	0114	32387		2596	14517	0161	00033	2052
0075	-0008	32556		2616	14467	0210	00065	1860
0100	-0011 B	3281 B		2636	14474	0255	00104	1666
0125	0096 I	3322 I		2664	14533	0293	00148	1406
0150	0235	33667		2690	14604	0326	00194	1168
0175	0329 B	3401 C		2709	14654	0353	00239	0992
0200	0392	34269		2724	14688	0376	00284	0861
0225	0413	34413		2733	14703	0397	00329	0777
0250	0421	34502		2739	14712	0416	00375	0721
0300	0424	34638		2750	14723	0450	00470	0628
0400	0420	34768		2760	14740	0509	00679	0537



C-REF-NO 003	YR 1966	DEPTH 475	WAVES 1 49X1	AIR T 15.8	VIS B
CONS. NO 039	MONTH 9	MXSAMPD 04	WAVES 2 00X0	WET B 12.8	STN
LAT 47-169N	DAY 01	NO.DPTH 16	WND-DIR 240	WW-CODE 03	
LON 59-553W	HR 06.5	W-COLOR	WND-SPD 07	CLD-TPE X	
MARSD SQ 150	C/I 1810	W-TRNSP	BARO 1009.8	CLD-AMT 3	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
065	0000	156	30827		2266	15042
065	0010	1578	30795		2259	15049
065	0021	1579	30799		2259	15051
065	0030	0931	31556		2440	14839
065	0040	0430	31945		2535	14647
065	0050	0237	32153		2569	14568
065	0075	0119	32506		2605	14525
065	0099	0093	32771		2628	14521
065	0149	0188	33440		2675	14580
065	0199	0352	34117		2715	14669
065	0223	0389	34272		2724	14691
065	0248	0401	34369		2731	14701
065	0297	0425	34622		2748	14723
065	0346	0420	34725		2757	14730
065	0394	0420	34768		2760	14739
065	0449	0421	34772		2760	14748

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1560	30827		2266	15042	0000	00000	5204
0010	1578	30795		2259	15049	0053	00003	5267
0020	1597 F	3078 E		2253	15056	0106	00011	5324
0030	0931	31556		2440	14839	0150	00022	3543
0050	0237	32153		2569	14568	0209	00045	2312
0075	0119	32506		2605	14525	0263	00079	1964
0100	0094	32784		2629	14521	0309	00120	1738
0125	0126 C	3311 B		2653	14544	0350	00167	1511
0150	0192	33456		2676	14582	0386	00216	1294
0175	0276 D	3382 G		2699	14629	0416	00266	1087
0200	0354	34125		2716	14670	0441	00315	0932
0225	0390	34281		2725	14692	0464	00364	0853
0250	0402	34380		2731	14702	0484	00414	0793
0300	0425	34631		2749	14723	0520	00515	0634
0400	0419	34775		2761	14740	0579	00724	0531

C-REF-NO 003	YR 1966	DEPTH 267	WAVES 1 18X1	AIR T 16.2	VIS 8
CONS. NO 040	MONTH 9	MXSAMPD 02	WAVES 2 00X0	WET B 12.8	STN
LAT 47-122N	DAY 01	NO.DPTH 12	WND-DIR 180	WW-CODE 03	
LON 60-043W	HR 07.9	W-COLOR	WND-SPD 04	CLD-TPE X	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1009.2	CLD-AMT 3	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
079	0000	164	29578		2152	15052
079	0010	1668	29552		2144	15062
079	0021	1365	30003		2243	14972
079	0030	0746	30785		2407	14758
079	0040	0201	31724		2537	14545
079	0050	0193	32026		2562	14547
079	0075	0184	32439		2596	14553
079	0100	0110	32594		2613	14526
079	0150	0180	33399		2673	14577
079	0201	0371	34113		2713	14677
079	0225	0380	34217		2721	14687
079	0250	0386	34281		2725	14694

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1640	29578		2152	15052	0000	00000	6287
0010	1668	29552		2144	15062	0063	00003	6369
0020	1410	29940		2229	14986	0123	00012	5558
0030	0746	30785		2407	14758	0170	00024	3859
0050	0193	32026		2562	14547	0233	00048	2377
0075	0184	32439		2596	14553	0289	00083	2057
0100	0110	32594		2613	14526	0339	00127	1892
0125	0120 D	3296 I		2642	14539	0383	00178	1618
0150	0180	33399		2673	14577	0420	00230	1329
0175	0281 G	3380 H		2697	14630	0451	00281	1109
0200	0368	34103		2713	14676	0477	00331	0962
0225	0380	34217		2721	14687	0500	00382	0890
0250	0386	34281		2725	14694	0522	00435	0851

C-REF-NO 003	YR 1966	DEPTH 204	WAVES 1 1921	AIR T 16.9	VIS 8
CONS. NO 041	MONTH 9	MXSAMPD 02	WAVES 2 00X0	WET B 12.4	STN
LAT 47-073N	DAY 01	NO.DPTH 8	WND-DIR 190	WW-CODE 02	
LON 60-130W	HR 09.2	W-COLOR	WND-SPD 06	CLD-TPE 1	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1008.8	CLD-AMT 2	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
092	0000	172	29385		2120	15074
092	0010	1738	29362		2114	15081
092	0020	1729	29431		2121	15081
092	0029	0778	30398		2372	14766
092	0040	0148	31532		2526	14519
092	0099	0183	32199		2577	14553
092	0148	0132	32886		2635	14548
092	0181	0303	34036		2714	14644

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1720	29385		2120	15074	0000	00000	6602
0010	1738	29362		2114	15081	0066	00003	6661
0020	1729	29431		2121	15081	0133	00014	6593
0030	0716 F	30485		2387	14743	0186	00027	4045
0050	0155	31671		2536	14525	0253	00052	2621
0075	0170	31943		2557	14540	0317	00093	2424
0100	0180	32212		2578	14552	0375	00145	2227
0125	0156	32572		2608	14550	0428	00205	1938
0150	0143	32961		2640	14554	0473	00268	1634
0175	0274	33851		2701	14628	0507	00323	1063

C-REF-NO 003	YR 1966	DEPTH 140	WAVES 1 2221	AIR T 18.2	VIS 7
CONS. NO 042	MONTH 9	MXSAMPD 01	WAVES 2 00X0	WET B 12.6	STN
LAT 47-027N	DAY 01	NO.DPTH 9	WND-DIR 220	WW-CODE 01	
LON 60-217W	HR 10.3	W-COLOR	WND-SPD 10	CLD-TPE 1	
MARSD SQ 151	C/I 1810	W-TRNSP	BARO 1007.2	CLD-AMT 2	HW

## O B S E R V E D

GMT	DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND
103	0000	170	29453		2129	15069
103	0010	1739	29424		2118	15082
103	0021	1745	29462		2120	15086
103	0030	1502	29832		2202	15016
103	0040	0437	30744		2440	14634
103	0050	0182	31260		2502	14532
103	0075	0135	32056		2568	14526
103	0101	0150	32748		2623	14546
103	0130	0221	33542		2681	14593

## I N T E R P O L A T E D

DEPTH	T E M P	S A L	OXYGEN	SGMT	SOUND	DELTA-D	POT.EN	SVA
0000	1700	29453		2129	15069	0000	00000	6508
0010	1739	29424		2118	15082	0066	00003	6618
0020	1752 B	2945 B		2117	15088	0132	00014	6632
0030	1502	29832		2202	15016	0195	00029	5821
0050	0182	31260		2502	14532	0283	00062	2951
0075	0135	32056		2568	14526	0349	00104	2316
0100	0148	32722		2621	14545	0401	00150	1819
0125	0203	3342 B		2672	14583	0441	00194	1333

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